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TENNECO CHEMICAL COMPANY A.K.A. KALAMA CHEMICAL COMPANY 290 RIVER ROAD GARFIELD, BERGEN COUNTY, NEW JERSEY EPA ID NO. NJD002005148

GENERAL INFORMATION AND SITE HISTORY

Tenneco Chemical is located in a commercial and residential area of the City of Garfield, Bergen County, New Jersey. The plant was originally constructed in 1900 by Von Heyden Chemical Fabrische, a german firm. The plant, closed during World War I, was subsequently owned and operated by Heyden-Newport Corporation. In early 1965, it was sold to Tennessee Gas Transmission Co. which later became Tenneco, Inc.. Kalama Chemical of Seattle, Washington purchased the property in December 1982. All owners of the site have used this facility as a chemical plant.

Salicylic acid has been manufactured at the site since 1903. Formaldehyde and methyl salicylate were also manufactured at that time. The original site contained four buildings with five additional buildings being added between 1910 and 1920. During the 1940s the manufacture of Parasepts (esters of parahydroxybenzoic acid), a proprietary product, began followed by the production of methylene disalicylic acid. A facility for the manufacturing of benzoic acid and benzaldehyde was constructed in 1967. This operation ceased permanently in 1984. Sodium, potassium, and magnesium salicylate salts were first manufactured in the 1970s. Formaldehyde production was discontinued in 1982. Although products are still manufactured on site, many of the operations have been discontinued.

An excerpt from the Eckhardt Report stated that approximately 169 hundred tons of chemical process waste was disposed of at this site through 1978. The components of the waste included acid solutions (pH<3), organics, and miscellaneous waste material. No other information could be found to document this claim.

SITE OPERATIONS OF CONCERN

Since 1903 various chemicals have been manufactured on the Tenneco Chemical Site. Each of the major products, some of which have been discontinued, were produced by different processes. The first material to be produced on site was salicylic acid in 1903. Bringing the product to spec required the heating of 99% crude salicylic acid and 1% moisture and non-volatile matter. Benzoic acid production, beginning in 1967 and discontinued in 1984, was by the direct oxidation of toluene. Periodic spills occurred in this area of production. The manufacturing of dodecal succinic anhydride (DDSA) used maleic anhydride and propylene tetromers as raw materials. Maleic anhydride was also used to produce fumaric acid. Methanol plus a catalyst were used to produce formaldehyde from the early 1900s until 1982. Also commencing in the early 1900s was the production of methyl salicylate via the esterification of methanol. During the 1940s, the manufacturing of methylene disalicylic acid was started. Formaldehyde, sulfuric acid, and salicylic acid were used to produce this material. Paraformaldehyde required 40% formaldehyde for its production. Also during the 1940s, manufacturing of parahydroxybenzoic acid and Parasepts began. Raw materials used for parahydroxybenzoic acid production included caustic potash, phenol, and carbon dioxide. Solvent carriers and an inorganic catalyst in an esterification reaction produced Parasepts. Raw materials

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used included aliphatic alcohols and phenolic acids. Potassium guaicalsulfonate required guaical, while sodium benzonate required benzoic acid and sodium carbonate as raw materials for production.

A total of 27 underground storage tanks with capacities of 500 to 16,000 gallons have existed at the facility. Currently, product remains in only seven of the tanks. Three tanks contain No. 6 fuel oil, one No. 2 fuel oil, one toluene, and two tanks contain methanol. As of June 1988, eleven of the unused tanks which contained methanol, toluene, benzaldehyde, or phenol had been removed from the ground with plans for others to follow. Prior to removal, the tanks were cleaned and soil excavated. Following removal, the tanks were cut up and disposed of by a contractor for Kalama Chemicals. Soil samples were collected in the area of the tanks during the removal process. The remaining tanks are either empty or filled with water, however, no product remains in these tanks.

Thirteen aboveground storage tanks are on site. The volume of these tanks range from 1,800 to 10,000 gallons. Materials in the tanks include benzaldehyde, formaldehyde, phenol, and sulfuric acid.

A NJPDES permit (No. NJ0000124) was first issued to Tenneco Chemical by the USEPA on June 30, 1974. The permit was for two discharges to surface water and one to a sanitary wastewater transport system. Discharge 001 is called the North River Water Outfall and 002 the Central River Water Outfall. Both outfalls are to the Passaic River. Kalama Chemicals' current permit, for the discharge of four outfalls, expires December 31, 1989. Discharges 001a and 001b contain non-contact cooling water, and 002 contains non-contact cooling water as well as stormwater runoff. These discharges, flow into the Passaic River. Discharge 003 is industrial wastewater from the facility to the Passaic Valley Sewerage Commissioner's Domestic Treatment Works. Tenneco/Kalama Chemicals has received several violations for high Biological Oxygen Demand (BOD) and Total Suspended Solid (TSS) levels in their discharges.

Spill containment on site includes: concrete dikes around the aboveground storage tanks in the benzoic acid area; sand bags and an absorbent compound for oil spills; a portable pump with suction and discharge hose to pump out diked areas; and crushed stone designed to absorb heavy oil, surrounding the No. 6 fuel oil unloading area and the underground storage tank fill and vent spouts. Spills and/or releases have occurred at various times on site; although no documentation of spills prior to 1981 could be located.

In March 1981, approximately 1000 pounds of toluene was released to the atmosphere when a cooling water pump failed. In April of that year, following a gasket failure, 75 pounds of liquid benzoic acid spilled onto the ground, condensed, and was blown over the adjacent neighborhood. Another gasket failure occurred in June 1981, this time spilling approximately 50 pounds of liquid benzoic acid. Again the material condensed and was blown towards the adjacent neighborhood. An estimated 30 pounds of salicylic acid was emitted to the atmosphere in June 1984 due to a plugged spray nozzle.

During a NJDEP, Division of Water Resources Compliance Evaluation Inspection on January 21, 1986, the following deficiencies were noted: up to 11 pounds of benzoic acid powder was discharged to the ground near the truck loading area and outside building 12, and a faulty or leaking hose

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connection caused the release of sulfuric acid during the unloading of a tank truck to the storage tank.

Approximately 1,000 gallons of methanol was reported to be spilled on April 6, 1987 during the unloading of a tank truck to an underground storage tank. The spill was within the diked area, however, due to a pump failure, the material was not recovered. The methanol either evaporated or seeped through to the ground. No injuries or illnesses were reported as a result of these incidents.

Between September 1987 and March 1988, nine monitoring wells were installed and sampled. High levels of benzene and toluene were detected in three of the wells. Twelve soil samples collected in December 1987 revealed high levels of toluene in four of the samples. Currently, NJDEP, BEECRA is awaiting Kalama Chemicals' sampling plan submitted for a second round of sampling and/or a cleanup plan.

GROUNDWATER ROUTE

The Tenneco Chemical site is underlain by 32 to 40 feet of unconsolidated deposits. These deposits consist of alluvial sand, silt, clay, and man-made fill. The fill consists of sand gravel, crushed stone, and brick fragments. The groundwater flow in the deposits is believed to be west towards the Passaic River.

Underlying the unconsolidated deposits is the Triassic Brunswick Formation, a bedrock formation, consisting of red and brown sandstones and shales. Weathering has resulted in the top of the bedrock's composition to consist of rock fragments in a mixture of clay, silt, and sand. The majority of area wells draw their water from the Brunswick Formation. Groundwater at the site was encountered at 2.5 to 12 feet below the ground surface.

Between September 1987 and March 1988, nine monitoring wells, seven shallow and two deep, were installed on site and sampled. The deep wells are between 31.5 and 40.0 feet deep and the shallow wells between 15.0 and 21.0 feet deep. All monitoring wells are within the unconsolidated deposits. Sampling of the wells was conducted by a contractor for Kalama Chemicals. Parameters tested on all wells included volatile organic compounds (VOCs) plus 15 peaks, base/neutral extractables plus 15 peaks, petroleum hydrocarbons (PHCs), and total phenol. Select wells were sampled for methanol, benzoic acid, benzaldehyde, formaldehyde, and inorganic compounds. In MW-7, a sample of the product layer floating on the water table revealed a concentration of 541,000 ppm toluene and 408,900 ppm PHCs. Low concentrations of base/neutrals were detected in all monitoring wells and in the floating product layer of MW-7. The highest base/neutral level detected was 570 ppb benzaldehyde in MW-5. Benzene and toluene were the most prevalent VOCs in the well samples; however, chlorobenzene, trans-1,2-dichloroethene, ethylbenzene, tetrachlorobenzene, and total xylenes were also shown to present in some of the samples. Sulfates, iron, and sodium as well as 2,570 ppm total phenols, and 120 ppm methanol were detected in MW-3, a shallow well. Total phenols were also detected in a deep well, MW-3D, and MW-4, at concentrations of 122 and 4.65 ppm, respectively. Plans for additional sampling are currently being developed.

Four public water supply systems using groundwater lie within 4 miles of the site. The nearest to the site, 0.5 mile north, is the City of Garfield Water Department with eleven wells. The wells, which draw from the

Triassic Brunswick Formation, are 170 to 710 feet deep with an average depth of 400 feet. Also drawing from the Brunswick Formation are the wells for Lodi and Wallington Boroughs. Lodi Borough has eleven wells 1.50 miles northeast of the site. These wells are 200 to 510 feet deep. Wallington Borough uses four wells which are 300 to 500 feet deep and are located 1.20 miles south of the site. These three public water supply systems serve approximately 60,000 people. The fourth system is the Hackensack Water Company. Only one well, 4 miles northeast of the site, draws from the Brunswick Formation. This well is 473 feet deep. The other three Hackensack wells are 86 to 243 feet deep and draw from Quaternary deposits. The Hackensack system serves approximately 36,000 people. Numerous industrial water supply wells are within 4 miles of the site.

Tenneco/Kalama Chemicals has never held any permits for discharge to groundwater.

SURFACE WATER ROUTE

Tenneco/Kalama Chemicals lies adjacent to the Passaic River. The facility holds a NJPDES permit (No. NJ0000124) to discharge non-contact cooling water and stormwater to the Passaic River through three outfalls. The permit, first issued June 30, 1974, expires December 31, 1989. A fourth permitted discharge is for industrial wastewater from the facility to the Passaic Valley Sewerage Commissioner's Domestic Treatment Works. The company has received violations for high Biological Oxygen Demand and Total Suspended Solids in its effluent.

No other migration pathways to downstream surface water exist. The Passaic River is tidal in the vicinity of the site; therefore, any contaminants entering the river could potentially contaminate areas upstream. The river is not used for drinking purposes within 4 miles of the site; however, it may be used for recreational purposes such as boating and/or fishing.

No freshwater or coastal wetlands are within 1 or 2 miles of the site, respectively. There are no habitats of Federally endangered species within 1 mile of the site.

AIR ROUTE

Tenneco/Kalama Chemicals has held up to 93 air pollution certificates to operate control apparatus and equipment under Plant ID No. 00053. A June 1988 inspection revealed that approximately two-thirds of the company's 93 stacks were operating. Four stacks had certificates renewed until 1993. Various spills resulting in the emission of contaminants were discussed in a previous section. On several occasions area residents have complained of smog and vapor releases as well as odors emitting from the plant. Many of the emissions were due to equipment failure.

The facility has received permit violations during inspections conducted by the NJDEP, Division of Environmental Quality. In September 1977 while filling a tank truck with formalin, air was exhausted without proper controls. A boiler heating Dow Therm to distill toluene, was discovered to be emitting smoke into the outdoor air in April 1979. Two violations were issued in December 1982. One was due to a toluene and water leak which emitted strong odors inside a plant building. The second was for the lack of water necessary to control vapors from a condensor.

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A potential for air contamination by the facility is present. Some emission stacks on site are still in operation. Also, three main products continue to be manufactured on site, thus providing a potential for release if a spill occurs.

SOIL

Five soil samples were collected from soil boring locations by a contractor for Kalama Chemical on June 25, 1986. The sampling locations included a shipping/transfer area for chemicals, the area of the fuel oil and methanol underground storage tanks, the railcar loading and unloading area, the benzaldehyde production area, and the chemical transfer area near Building 32. These samples were analyzed for Hazardous Substance List Organics. Results revealed the concentration of toluene to be 2,470 ppm in an area adjacent to the benzaldehyde storage tanks. Phenol was detected at 19.8 ppm outside Building No. 32, which is used for shipping chemicals by truck. No other high concentrations were detected.

Between December 10 and 18, 1987 a contractor for Kalama Chemicals collected twelve soil samples from soil borings on site. Sample locations were similar to those used for the June 1986 sampling episode. The samples were analyzed for volatile organic compounds (VOCs), base/neutral extractable compounds, total phenols, PCBs, and selected other compounds. Four samples collected from the southeastern portion of the facility revealed extremely high levels of toluene. The highest level was 16,800,000 ppb in Soil Sample #2 at the underground storage tank for toluene. Benzene was also detected in high concentrations, up to 6,000 ppb, at two sampling locations collected from the southeastern portion of the facility. Several base/neutral extractable compounds were detected in samples collected from the southern half of the facility. Soil Sample #2 had the highest level of total base/neutral compounds, 37,760 ppb, as well as total petroleum hydrocarbons, 4,660 ppm and total phenols, 200 ppm. Benzoic acid and benzaldehyde were not detected in any of the soil samples.

DIRECT CONTACT

No incidents of direct contact have been documented. Although residential areas are adjacent to the site, the site is completely surrounded by a fence, restricting access. There is a potential for the 75 employees to come into contact with hazardous wastes on site.

FIRE AND EXPLOSION

There have been no reported incidents of fire and/or explosion on site. A potential for fire and/or explosion exists due to flammable materials that are currently used on site.

ADDITIONAL CONSIDERATIONS

No documentation states that there has been damage to flora and/or fauna. Damage may occur in areas of the site that are unpaved or if contaminants enter the Passaic River. Contaminants detected on site may bioaccumulate; therefore, a potential for contamination of the food chain exists. Damage to offsite property has not been documented, but there is a potential due to discharge and/or runoff.

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PRIORITY DESIGNATION AND RECOMMENDATIONS

Based upon data collected for the Preliminary Assessment, the site poses a high environmental concern due to soil and groundwater contamination. Sampling of soil and on site monitoring wells has revealed high concentrations of toluene and benzene.

Sampling by the Bureau of Planning and Assessment (BPA) is not recommended because the Bureau of Environmental Evaluation and Cleanup Responsibility Assessment (BEECRA) is monitoring the progress of site activities. Currently, BEECRA is awaiting a sampling plan for a second round of sampling which was to have been submitted in October 1988. Also, a cleanup plan is to be presented to BEECRA for approval. A Site Inspection Review of BEECRA's sampling results by the BPA is recommended.

Surface water discharge is permitted by NJPDES. It is recommended that NJPDES continue to monitor the discharge and report additional violations.

Submitted by:

Donna J. Restivo HSMS IV NJDEP/Bureau of Planning and Assessment February 28, 1989

Hours: 65



Preliminary Assessment

TENNECO CHEMICAL
a.k.a. KALAMA CHEMICAL
290 RIVER ROAD
GARFIELD, BERGEN COUNTY, NEW JERSEY
EPA ID NO. NJD002005148

POTENTIAL HAZARDOUS WASTE SITE

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POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

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POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

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O1 X F. CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O1 XG. DRINKING WATER CON O3 POPULATION POTENTIALLY A potential for drivenswick Formation of the overlay the	SOIL STED: (Acres) Shown the presence (ATAMINATION 96,000 Inking water contain and contamination formation.	Attachment: B O2 X OBSERVED (DATE 12/87) O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Dring on has been discovered	uene and Attachmen Attachmen king wate in the un	OTENTIAL benzen t: E OTENTIAL r is d donsol	= ALLE e onsit = ALLE rawn fr idated	GED GED Om the deposit
O1 X F. CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O3 POPULATION POTENTIALLY A POTENTIAL PART A POTENT	SOIL 8 STED: 8 JACRES! Shown the presence of the second	Attachment: B 02 > OBSERVED (DATE 12/87 04 NARRATIVE DESCRIPTION e of high levels of tol 02 = OBSERVED (DATE 04 NARRATIVE DESCRIPTION on has been discovered 02 = OBSERVED (DATE 05 NARRATIVE DESCRIPTION on has been discovered	uene and Attachmen Attachmen king wate in the un Att	OTENTIAL t: E OTENTIAL r is d donsol achmen	Z ALLE e onsita Z ALLE rawn fr idated ts: B	GED GED Om the deposit
O1 X F. CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O1 X G. DRINKING WATER CON O3 POPULATION POTENTIALLY A potential for dr Brunswick Formatio which overlay the	SOIL 8 STED: 8 JACRES! Shown the presence of the second	Attachment: B O2 X OBSERVED (DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered	uene and Attachmen Attachmen king wate in the un Att	OTENTIAL t: E OTENTIAL r is d donsol achmen	Z ALLE e onsita Z ALLE rawn fr idated ts: B	GED GED Om the deposit
O1 X F. CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O1 X G. DRINKING WATER CON O3 POPULATION POTENTIALLY A potential for dr Brunswick Formatio which overlay the	SOIL 8 STED: 8 JACRES! Shown the presence of the second	Attachment: B O2 X OBSERVED (DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION on has been discovered to contact hazardous was a contact hazard	uene and Attachmen Attachmen king wate in the un Att stes on s	OTENTIAL t: E OTENTIAL r is d donsol achmen OTENTIAL	TALLE e onsite rawn freidated ts: B	GED GED Om the deposit
O1 XF CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O3 POPULATION POTENTIALLY A potential for dr Brunswick Formation which overlay the O1 X H. WORKER EXPOSURE/O3 WORKERS POTENTIALLY AND THE OS WORKERS POTENTIALLY AND THE OS A POTENTIAL AND THE POTENTIAL	SOIL 8 STED: 8 JACRES: 98 Shown the presence of the second of the sec	Attachment: B O2 SOBSERVED DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 COBSERVED DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 COBSERVED DATE 04 NARRATIVE DESCRIPTION and DATE 04 NARRATIVE DESCRIPTION to contact hazardous wa	uene and Attachmen Attachmen king wate in the un Att stes on s ttachment	DIENTIAL t: E OTENTIAL r is d donsol achmen OTENTIAL ite. s: B,	TALLE e onsite rawn freidated ts: B	GED GED Om the deposit
O1 XF CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O3 AREA POTENTIALLY AFFECT O3 POPULATION POTENTIALLY AS THE CONTRACT OF THE	SOIL 8 STED: 8 JACRES: 98 Shown the presence of the second of the sec	Attachment: B O2 X OBSERVED (DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered	uene and Attachmen Attachmen king wate in the un Att stes on s ttachment	OTENTIAL t: E OTENTIAL r is d donsol achmen OTENTIAL	TALLE e onsite rawn freidated ts: B	GED GED om the deposit and E
O1 XF CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O3 AREA POTENTIALLY AFFECT O3 POPULATION POTENTIALLY AS THE CONTRACT OF THE	SOIL 8 STED: 8 JACRES: 98 Shown the presence of the second of the sec	Attachment: B O2 X OBSERVED (DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered	uene and Attachmen Attachmen king wate in the un Att stes on s ttachment	DIENTIAL t: E OTENTIAL r is d donsol achmen OTENTIAL ite. s: B,	TALLE e onsite rawn fridated ts: B TALLE	GED GED om the deposit and E
O1 XF. CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O1 XG. DRINKING WATER CONTO O3 POPULATION POTENTIALLY AFFECT ON THE POPULATION POTENTIALLY AFFECT ON WORKER EXPOSURE/O3 WORKERS POTENTIALLY AFFECT ON WORKERS POTENTIALLY AFFECT ON THE POPULATION EXPOSURE/O3 POPULATION POTENTIALLY	SOIL 8 STED: 8 Shown the presence shown the presence shown the presence shown affected: 96,000 inking water contain and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation.	Attachment: B O2 X OBSERVED (DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION to contact hazardous was a contact hazar	uene and Attachmen Attachmen king wate in the un Att stes on s ttachment	DIENTIAL t: E OTENTIAL r is d donsol achmen OTENTIAL ite. s: B,	TALLE e onsite rawn fridated ts: B TALLE	GED GED om the deposit and E
O1 X F. CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O3 AREA POTENTIALLY AFFECT O3 POPULATION POTENTIALLY A POPULATION POTENTIALLY A POPULATION POTENTIALLY A POPULATION POTENTIALLY A POPULATION POTENTIALLY B POPULATION PO	SOIL 8 STED: 8 Shown the presence shown the presence shown the presence shown affected: 96,000 inking water contain and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation.	Attachment: B O2 X OBSERVED (DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION to contact hazardous was a contact hazar	uene and Attachmen Attachmen king wate in the un Att stes on s ttachment	DIENTIAL t: E OTENTIAL r is d donsol achmen OTENTIAL ite. s: B,	TALLE e onsite rawn fridated ts: B TALLE	GED GED om the deposit and E
O1 X F. CONTAMINATION OF O3 AREA POTENTIALLY AFFECT O3 AREA POTENTIALLY AFFECT O3 POPULATION POTENTIALLY A POPULATION POTENTIALLY A POPULATION POTENTIALLY A POPULATION POTENTIALLY A POPULATION POTENTIALLY B POPULATION PO	SOIL 8 STED: 8 Shown the presence shown the presence shown the presence shown affected: 96,000 inking water contain and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation. STAMINATION 96,000 inking water contain and contamination and contamination formation.	Attachment: B O2 X OBSERVED (DATE 12/87 O4 NARRATIVE DESCRIPTION e of high levels of tol O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION amination exists. Drin on has been discovered O2 T OBSERVED (DATE 04 NARRATIVE DESCRIPTION to contact hazardous was a contact hazar	uene and Attachmen Attachmen king wate in the un Att stes on s ttachment	DIENTIAL t: E OTENTIAL r is d donsol achmen OTENTIAL ite. s: B,	TALLE e onsite rawn fridated ts: B TALLE	GED GED om the deposit and E

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POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

I. IDENTIFICATION				
O1 STATE	02 SITE NUMBER D002005148			

PART 3 - DESCRIPTION (OF HAZARDOUS CONDITIONS AND INCIDENTS NJ D002005148
II. HAZARDOUS CONDITIONS AND INCIDENTS (Continue	ed:
01 X J DAMAGE TO FLORA 04 NARRATIVE DESCRIPTION	02 - OBSERVED (DATE) POTENTIAL _ ALLEGED
A potential for damage to flora	exists due to contaminants being on site and/or
discharging to the Passaic River	Attachments: E,J
01 X K DAMAGE TO FAUNA 04 NARRATIVE DESCRIPTION (Include name)3: 0' SDecies.	02 - OBSERVED (DATE:) X POTENTIAL - ALLEGED
A potential for damage to fauna edischarging to the Passaic River.	exists due to contaminants being on site and/or
and strangering to the russuite kiver.	Attachments E,J
01 🕱 L CONTAMINATION OF FOOD CHAIN 04 NARRATIVE DESCRIPTION	02 I OBSERVED (DATE) X POTENTIAL I ALLEGED
Contaminants detected on site may	y bioaccumulate; therefore, a potential for contaminati
of the food chain exists.	Attachment: J
01 X M UNSTABLE CONTAINMENT OF WASTES (Soits Runoff Stending Boulds Leaking drums	OZ X OBSERVED (DATE VARIOUS) _ POTENTIAL _ ALLEGED
OS POPULATION POTENTIALLY AFFECTED:	O4 NARRATIVE DESCRIPTION
Various spills that have occurred	at the site have caused the release of vapors to the
01 X N. DAMAGE TO OFFSITE PROPERTY	eeped through the ground. Attachments: K,L,M,N
04 NARRATIVE DESCRIPTION	
mere is a potential for damage t	o off site property due to discharge and/or runoff.
	Attachment: B
01 🔀 O CONTAMINATION OF SEWERS, STORM DRAINS W 04 NARRATIVE DESCRIPTION	WTPs 02 T OBSERVED (DATE) X POTENTIAL T ALLEGED
permitted discharge enters the P	assaic Valley Sewerage System. If contaminants enter
e discharge, the sewers may beco	me contaminated.
01 X P ILLEGAL UNAUTHORIZED DUMPING	Attachment: J 02 TOBSERVED(DATE) X POTENTIAL TALLEGED
04 NARRATIVE DESCRIPTION	
nere is a potential for illegal/	unauthorized dumping. Early on site activities were
	Attachments: A,B
OS DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR	ALLEGED HAZARDS
II. TOTAL POPULATION POTENTIALLY AFFECTED:	06.000
V. COMMENTS	96,000
. SOURCES OF INFORMATION (Cre specific references e.g. stat	
ttachments: A,B,E - NJDEP, ECRA	
J,V - NJDEP, DWR, Ce	
K,L - NJDEP, DEQ	
M,N - NJDEP, DWR, Me	etro Office

	DATELIE!	A 1 1 4 5 4	000	C.W.A.GRE 5::		LIDENT	IFICATION
\$EPA	PUIENII	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION OI STATE OR SITE NUMBER OF STATE OF SITE SITE SITE SITE SITE SITE SITE SITE					
ALLY	PART 4 . PERM			TIVE INFORMAT	CION	NŦ	D002005148
U 050447 10500000000000000000000000000000000000				TIVE III ORINA			
01 TYPE OF PERMIT ISSUED	02 PERMIT NUMBER	TO3 DATE	CCUED	0.5488480	1 00 00		<u> </u>
Check all that apply:	02 PERMIT NUMBER	OS DATE	33050	04 EXPIRATION DATE	05 COMMENTS		
XA NPDES	0000124	11/1	5/84	12/31/89	Four dis	charg	es to the
□ B, UIC			•		Passaic		
X C. AIR	00053			'			es have been
I D RCRA					. i		company.
E. RCRA INTERIM STATUS			-				
TF SPCC PLAN				· · · · · · · · · · · · · · · · · · ·	 		· · · · · · · · · · · · · · · · · · ·
G. STATE Specify!					<u> </u>		
☐ H. LOCAL Soecity)		 			 	 .	
Soecity)					 		
· · · · · · · · · · · · · · · · · · ·	<u> </u>						
□ J. NONE					<u></u>		
III. SITE DESCRIPTION							
01 STORAGE DISPOSAL (Check all that apply)	02 AMOUNT 03 UNIT	OF MEASURE	04 TR	EATMENT Check at her.	20071	35 CT	HER
A. SURFACE IMPOUNDMENT			= A.:	NCENERATION		.	4. 61.11. 61.1. 60. 61. 6.76
C 8. PILES			□ 8.1	UNDERGROUND INJ	ECTION	4	A. BUILDINGS ON SITE
☐ C. DRUMS, ABOVE GROUND	7 tanks		ł .	CHEMICAL PHYSIC	AL		
I E. TANK, BELOW GROUND			Į.	BIOLOGICAL		26.10	** OF CITE
I F LANDFILL _			l .	WASTE OIL PROCES SOLVENT RECOVER		06 AM	EA OF SITE
☐ G. LANDFARM			l	OTHER RECYCLING			8
T H. OPEN DUMP			l	OTHER	PRECOVERY		Acres,
C I. OTHER			_		ecity)		
07 COMMENTS	- 				·		
A total of 27 undergrou	und storage tam	nks hav	e ex	isted at th	e site.	Produ	ct remains in
only 7 of the tanks.	Eleven of the i	inused	tanks	s have been	removed	and t	he remaining
tanks are either empty	or filled with	ı water			I CIIIO V C C	ana c	ne remarning
• •			-				
						_	
					Atta	chmen	t: B
V. CONTAINMENT							
DI CONTAINMENT OF WASTES (Check one)							
C A. ADEQUATE, SECURE	☐ B. MODERATE	¥ C. IN	ADEQU	ATE, POOR	C D. INSECL	JRE. UNSC	DUND DANGEROUS
DZ DESCRIPTION OF DRUMS, DIKING, LINERS, B	ARRIERS ETC					*	
		1			_		
Spill containment includes	udes: concrete	dikes	arou	ind the abo	veground	stora	ge tanks; sand
bags and absorbent for	oil spills; cr	ushed	stone	to absorb	heavy oil	; and	a pump to
pump out diked areas.							
					Atta	.chmen	t: B
V. ACCESSIBILITY					·		
01 WASTE EASILY ACCESSIBLE: TYES	A NO						
02 COMMENTS	•						
The entire site is fend	ced preventing	access	by t	he general	public.		
•					A	ttach	ment: B
L SOURCES OF INFORMATION (C#0 200	icific references, e.g. state (des. sam	D/8 8/14/y S/3. / 800	utsi			<u> </u>	
Attachment: B- NJDEP,	ECRA FILES						

OFDA	POTE		TIAL HAZARDOUS WASTE SITE				ENTIFICATION
ŞEPA		SITE INSPEC				ig io	D002005148
	PART 5 - WATER	I, DEMOGRAPH	IC, AND ER	VIRON	MENTAL DATA	<u> </u>	
II. DRINKING WATER SUPPLY			-				
01 TYPE OF DRINKING SUPPLY (Check as applicable)		02 STATUS				0:	3 DISTANCE TO SITE
SURFACE	WELL	ENDANGER	ED AFFE	CTED	MONITORED		
COMMUNITY A =	B. 🕱	A. 🕱	В.		C. 🗆	1	. <u>0.5</u> (mi)
NON-COMMUNITY C. I	D . 🗆	D . 🗆	F□	В			
III. GROUNDWATER						<u> </u>	
01 GROUNDWATER USE IN VICINITY (Check	one)						
漢 A. ONLY SOURCE FOR DRINKING	© B DRINKING (Other sources evenet COMMERCIAL IN) (No other weter source)	DUSTRIAL IRRIGATIO	سا)	OMMERCIAL Tried other sou	., INDUSTRIAL, IRRIGAT Irces evenade)	FION	C D NOT USED UNUSEABLE
02 POPULATION SERVED BY GROUND WAT	PER 96,000	<u>-</u>	03 DISTANC	E TO NEARE	ST DRINKING WATER	WELL	0.5 (mi)
04 DEPTH TO GROUNDWATER	05 DIRECTION OF GRO	UNDWATER FLOW	06 DEPTH TO		07 POTENTIAL YIEL	Δ	08 SOLE SOURCE AQUIFER
2.5 (ft)	West		0F CONC 40		of aquifer Unknown		X YES INO
09 DESCRIPTION OF WELLS (including useage.			70	(ft)	OHRHOWH	_ (gpd)	4 .25
Public supply wells lie within the Triassic Brunswick Formation except the Hackensack Water Company which uses Quaternary Deposits. Attachments: B and E 10 RECHARGE AREA There is potential for this COMMENTS area to be a groundwater NO recharge area if contaminants migrate - NO the Passaic River.							
NO recharge area in the aquifer. IV. SURFACE WATER	Attachment	B B	□ NO	rue 1	assarc nrv	At	ttachment: B
01 SURFACE WATER USE (Check one)			· · · · · ·				
X A RESERVOIR (RECREATION) DRINKING WATER SOURCE	IMPORTANT	ECONOMICALLY RESOURCES	□ c.c	OMMERCI	AL, INDUSTRIAL	21	D. NOT CURRENTLY USED
02 AFFECTED POTENTIALLY AFFECTED BO	DIES OF WATER						
NAME:					AFFECTED		DISTANCE TO SITE
Passaic River					_	1	100 feet
							(mi)
							(mi)
V. DEMOGRAPHIC AND PROPERTY	INFORMATION						(m),
11 TOTAL POPULATION WITHIN	INFORMATION						
				02	DISTANCE TO NEARE	ST POPU	ILATION
A. 33 000 B.	0 (2) MILES OF SITE 131 000 NO OF PERSONS	c. <u>21</u>	MILES OF SI 3.500 OF PERSONS	TΕ	_50	fee	et(mi)
3 NUMBER OF BUILDINGS WITHIN TWO (2) N	ILES OF SITE		04 DISTANCE	TO NEARES	T OFF-SITE BUILDING		
34,500		İ			50 feet	(n	mi)
5 POPULATION WITHIN VICINITY OF SITE (Pro	ivide narrative description of na	ture of population within we	candy of side. e g .	rurai, village, d	lensely populated urban area	b)	
The site is located : There are two schools	in a densely	y populated	d urban	area	of Garfield	l, Be	ergen County.
					Man 1		
					Map 1		ļ

POTENTIAL HAZARDOUS WASTE SITE

	١.	DE	NT	F	CAT	10	N
- 1	$\overline{}$	CT	TE	722	CITE	A	

≎ EPA		CTION REPORT O1 STATE O2 SITE NUMBER NJ D002005148			
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA VI. ENVIRONMENTAL INFORMATION					
01 PERMEABILTY OF UNSATURATED					
		□ C. 10 ⁻⁴ + 10 ⁻³ cm/sec □ D. GREATER THAN 10 ⁻³ cm/sec			
02 PERMEABILITY OF BEDROCK Check	onei				
A IMPERM	MEABLE B. RELATIVELY IMPERMEA	BLE C RELATIVELY PERMEABLE COVERY PERMEABLE (110 ⁻² - 10 ⁻⁴ cm sec) (Greater than 10 ⁻² cm sec)			
03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH			
_40 (m)	<u>Unknown</u> (m)	<u>Unknown</u>			
06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE DIRECTION OF SITE SLOPE TERRAIN AVERAGE SLOPE			
(in)	(in)	<u>∠1</u> West <u> </u>			
09 FLOOD PCTENTIAL	10				
SITE IS IN500_ YEAR FLO	OCOPLAIN	IIER ISLAND. COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY			
11 DISTANCE TO METLANDS 15 acre minim		12 DISTANCE TO CRITICAL HABITAT of encangered species;			
ESTUARINE	OTHER	(mi)			
A. > 2 (mi)	B. <u>>1</u> (mı)	ENDANGERED SPECIES: N/A			
DISTANCE TO	RESIDENTIAL AREAS, NATIO	NAL STATE PARKS. AGRICULTURAL LANDS			
COMMERCIAL INDUSTRI	IAL FORESTS, OR WILDLI	FE RESERVES PRIME AG LAND AG LAND			
A 50 feet (mi)	s. <u>50 feet</u>	(mi)			
14 DESCRIPTION OF SITE IN RELATION T	TO SURROUNDING TOPOGRAPHY				
The site is located relatively flat wit	l in an urban area adjac h a slight slopeto the i	ent to the Passaic River. The area is Passaic River.			
•					
		W- 1			
VII. SOURCES OF INFORMATION	Cite zoecific references, e.g., state files, samore analysm	Map 1			
Mapi- USGS Topograph		reporte/			
Attachments: B,E, -	uic map - NJDEP, ECRA FILES				
· - /-/	,				

ŞEPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT	OI STATE 02	
		PART 6 - SAMPLE AND FIELD INFORMATION	Od LN	02005148
II. SAMPLES TAKE	N			-
SAMPLE TYPE	01 NUMBER OF SAMPLES TAKE	O2 SAMPLES SENT TO		03 ESTIMATED DATE
GROUNDWATER	9			AVAILABLE
SURFACE WATER		GERAGHTY & MILLER, INC.		TIVILE REBEE
WASTE		HACKENSACK, NJ		
AIR		moranomy no	<u> </u>	
RUNOFF				
SPILL				
SOIL	17			AVAILABLE
VEGETATION				
OTHER				
III. FIELD MEASURE	MENTS TAKEN			L
IV. PHOTOGRAPHS A				
01 TYPE _ GROUND		02 IN CUSTODY OF	,	
MAPS C XYES INO	NJDEP, DHWM, E			
	A COLLECTED (Provide nerraine			
				-
/I. SOURCES OF INFO	DRMATION (Cité specific references	A.C. LISIA INA. SERON REPORT AND ADDRESS.		
	nts: E,U - NJDE			
PA FORM 2070-13 (7-81)				

\$EPA		SITE INSPEC	RDOUS WASTE SITE	1. IDENTIF 01 STATE O NJ	CATION 2 SITE NUMBER 1002005148
		PART 7 - OWNE	ER INFORMATION		
II. CURRENT OWNER(S)			PARENT COMPANY 1 2001C20101		
KALAMA CHEMICAL		02 D+B NUMBER	OB NAME		C9 D+B NUMBER
03 STREET ADDRESS P O Box AFD # etc		09-289-9574		 	
1110 BANK OF CALIFORNI	ለ ሮሮእምነ	1	10 STREET ADDRESS (P 0 Box 9FD + erc)		11 SKC CCDE
05 CITY		E 07 ZIP CODE	12 CITY	112 57476	1.4 ZIP CODE
SEATTLE	WA	98164		13312/2	14 ZIF CODE
O1 NAME		02 D+B NUMBER	08 NAME		09 0+3 NUMBER
03 STREET ADDRESS (P.O. Box, RFD P, etc.)		04 SIC CODE	10 STREET ADDRESS P O BOX. RFD # MC		11 SIC CODE
05 CITY	O6 STATE	07 ZIP CODE	12 CITY	T	
		Or EF CODE	12 011 4	13 STATE	14 ZIP CODE
01 NAME		02 D+8 NUMBER	CB NAME		09 0 - 3 YUMBER
		1			
DE STREET ADDRESS P O Box RFD # etc.)		04 SIC CODE	10 STREET ADDRESS P O Box. RFD # etc.:		11310 0006
DS CITY	OR STATE	07 ZIP CODE	12 CITY	1.2 == :-	
	303,716	- L. 550E	12 0111	13 STATE	1 4 ZIP CODE
1 NAME		02 D+8 NUMBER	OB NAME		09 0 + 8 NUMBER
					USUT B TUMBER
03 STREET ADDRESS P O Box. RFD . etc.		04 SIC CODE	10 STREET ADDRESS (P O Box. RFO + erc.)		1 I SIC CODE
DS CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
II. PREVIOUS OWNER(S) LESS most recent for	BET .		IV. REALTY OWNER(S) IT EDDITEADIR. IST THE	osi recent fest)	
TENNECO INC.		02 D+6 NUMBER	01 NAME		02 D+8 NUMBER
3 STREET ADDRESS P O BOX, RFD #, MC.		04 SIC CODE			
290 RIVER ROAD		04 SIC CODE	03 STREET ADDRESS (P O BOX, RFD #, etc.)		04 SIC CODE
5 CITY	JOBSTATE	07 ZIP CODE	los city		
GARFIELD	ИЛ		03 611 7	06 STATE	07 ZIP CODE
1 NAME			01 NAME		22.2.2
HEYDEN-NEWPORT CORP.			-		02 D+8 NUMBER
3 STREET ADDRESS (P O Box. RFD +, etc.)		04 SIC CODE	03 STREET ADDRESS (P O Box, RFD # etc.)		04 SIC CODE
290 RIVER ROAD		. [07 30 0002
CARETELD		07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
GARFIELD	ŊJ	07026			
NAME	1	02 D+8 NUMBER	01 NAME		02 0+8 NLMBER
VAN HEYDEN CHEMICAL FAB	RISCHE				
290 RIVER ROAD		04 SIC CODE	03 STREET ADDRESS (P.O. Box, AFD P. erc.)	I	04 SIC CODE
CITY	OGSTATE	07 ZIP CODE	05 CITY	OS STATE	07 ZIP CODE
GARFIELD	NJ	07026			J. 27 000E
. SOURCES OF INFORMATION (CAO SDOO	the references of	O. State like samete sensus	Marie I		
Attachment: A - NJDEP					

	SITE INSDECT	T1011 DED 000		
		TION REPORT OR INFORMATION		2 SITE NUMBER D002005 1 48
	PART O' OPERAT			
	02 D+R NUMBER		(If applicable)	
	00-200-5148			11 D+8 NUMBER
	2869	12 STREET ADDRESS (P.O. BOX. RFD #, etc.)		13 SIC CODE
06 STATE NJ	=	14 CITY	15 STATE	16 ZIP CODE
t. provide only	r If different from owner)	PREVIOUS OPERATORS: PARENT	COMPANIES	
		10 NAME	COMPANIES	11 D-B NUMBER
I	04 SIC CODE	12 STREET ADDRESS (P O Box RFD + etc.)		13 SIC CODE
6 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
JRING THIS	PERIOD			
	DZ D+B NUMBER	10 NAME		11 D+B NUMBER
	04 SIC CODE	12 STREET ADDRESS (P.O BOA, RFD + SIE.)		13 SIC CODE
6 STATE	7 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
JRING THIS	PERIOO			
To	2 D+B NUMBER	10 NAME		11 D-B NUMBER
	104 SIC CODE	12 STREET ADDRESS (A.C. Day OCC.)		les constants
		TE STREET PUBLICASING SEE PROPERTY		ta Sic Cobe
6 STATE 0	7 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
RING THIS	PERIOD			
ferences, e.o	Eleto (less sempre enervois ye	00/78/		
ECKA	FILES			
	•			
	O6 STATE NJ N. provide only N. provide	02 D+B NUMBER	02 D+8 NUMBER	02 D+B NUMBER 10 NAME 12 STREET ADDRESS (P 0 Box RFD + etc.) 15 STATE 07 ZIP CODE 14 CITY 15 STATE 07 ZIP CODE 15

ODE 03 STREET ADDRESS (P 0 Box. RFD * etc.) 05 CITY 06 STATE 0 06 STATE 0 07 CITY 06 STATE 0 08 STATE 0 09 CITY 06 STATE 0 09 CITY 06 STATE 0	22 D - B NUMBER
GODE OS STREET ADDRESS (P.O. BOX. RFD = MC.) OS CITY OS CITY OS CITY OS CITY OS STATE OF STATE O	04 SIC CODE 07 ZP CODE 02 D-B NUMBER 04 SIC CODE
ABER 01 NAME OS CITY OS STATE OF STATE	04 SIC CODE 07 ZP CODE 02 D-B NUMBER 04 SIC CODE
ABER OI NAME CODE 03 STREET ADDRESS (P 0 Box. RFD P orc.) O5 CITY 06 STATE CODE 03 STREET ADDRESS (P 0 Box. RFD P erc.) O5 CITY 06 STATE CODE 03 STREET ADDRESS (P 0 Box. RFD P erc.) O5 CITY 06 STATE CODE 03 STREET ADDRESS (P 0 Box. RFD P erc.)	04 SIC CODE 07 ZP CODE 02 D-B NUMBER 04 SIC CODE
OS CITY OS	04 SIC CODE 07 ZP CODE 02 D-B NUMBER 04 SIC CODE
OS CITY OS	04 SIC CODE 07 ZP CODE 02 D-B NUMBER 04 SIC CODE
BER 01 NAME CODE 03 STREET ADDRESS (P 0 Box, RFD = etc.) 05 CITY 06 STATE C DDE 03 STREET ADDRESS (P 0 Box, RFD = etc.) 05 CITY 06 STATE C 05 CITY 06 STATE C	07 ZP CODE 02 D - B NUMBER 04 SIC CODE
BER 01 NAME 05 CITY 06 STATE 0 06 STATE 0	22 D - B NUMBER
ODE 03 STREET ADDRESS (P 0 Box, RFD P etc.) 05 CITY 06 STATE C DDE 03 STREET ADDRESS (P 0 Box, RFD P, etc.) 05 CITY 06 STATE C	04 SIC CODE
DOS CITY OS CITY OS STATE C	
DODE 03 STREET ADDRESS (P 0 Bas. RFD #. BIC.) 05 CITY 06 STATE 0	
ODE 03 STREET ADDRESS (P 0 Box. RFD #. etc.) O5 CITY 06 STATE 0	7 ZP CODE
ODE 03 STREET ADDRESS (P 0 Box. RFD #. etc.) O5 CITY 06 STATE 0	
05 CITY 06 STATE 0	2 D-3 NUMBER
	04 SIC CODE
SER OLNAMS	7 ZP CODE
O TAME	2 D+3 NUMBER
ODE 03 STREET ADDRESS (P.O. Box. RFD #. etc.)	C4 SIC CODE
05 CITY 06 STATE 0	7 ZIP CODE
Pole analysis, reports)	
POId analysia	05 CITY 06 STATE 0

0.504	POTENTIAL HAZARDOUS WASTE SITE		I. IDENTIFICATION
⊕EPA	SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES		NJ D002005148
II. PAST RESPONSE ACTIVITIES	N/A		· · · · · · · · · · · · · · · · · · ·
01 C A. WATER SUPPLY CLOSED 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 G B. TEMPORARY WATER SUPPLY PROVI 04 DESCRIPTION	IDED 02 DATE	03 AGENCY	
01 C. PERMANENT WATER SUPPLY PROVI 04 DESCRIPTION	DED 02 DATE	03 AGENCY	
01 TO SPILLED MATERIAL REMOVED 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 C E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY	
01 E H. ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY	
01 (1) IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C L ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY	
01 G M EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T N CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY	
01 TO EMERGENCY DIKING/SURFACE WATE 04 DESCRIPTION	R DIVERSION 02 DATE	03 AGENCY	
01 C P CUTOFF TRENCHES SUMP 04 DESCRIPTION	02 DATE	03 AGENCY	
01 C Q SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY	

\$EPA	POTENTIAL HAZARDOUS WASTE SITE		I. IDENTIFICATION 01 STATE 02 SITE NUMBER
	SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES		NJ D00200514
PAST RESPONSE ACTIVITIES (Continued)	N/A		
01 Z R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T. S. CAPPING COVERING 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T U GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T V. BOTTOM SEALED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 T W GAS CONTROL 04 DESCRIPTION	02 DATE	03 AGENCY	
01 Z X. FIRE CONTROL 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 T.Y. LEACHATE TREATMENT 04 DESCRIPTION	O2 DATE	03 AGENCY_	
01 _ Z. AREA EVACUATED 04 DESCRIPTION	O2 DATE	03 AGENCY	
01 = 1 ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE	03 AGENCY	
01 = 2. POPULATION RELOCATED 04 DESCRIPTION	02 DATE	03 AGENCY_	
01 C 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE	03 AGENCY_	

9	F	P	Δ
	_		

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER NJ D002005148

II. ENFORCEMENT INFORMATION	
-----------------------------	--

N/A

01 PAST REGULATORY/ENFORCEMENT ACTION THE YES X NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cité apocific references e.g., siète fies, semple enerysis, reports)

Facility Name: Tenneco Chemical (a.K.a. Kalama Chemica)
Location: Garfield, Bergen County, NJ
EPA Region: 2
Person(s) in Charge of the Facility:
· · · · · · · · · · · · · · · · · · ·
Name of Reviewer: Donna Restivo Date: 23/89 General Description of the Facility:
(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.) Chemicals have been manufactured on site since
1903. Most of the on site production has
ceased. Spills and releases to the
atmosphere have occurred.
Scores:
HRS sy = 25,95 (sy = 44,90sy = 0.04sz = 0.00)
PRO SH = 35.66 (Sgw = 44.90 Sgw = 0.05Sa = 42.3))

		Ground Water Route Work Sheet				
	Rating Factor	Assigned Value (Circle One)	Multi-	HRS	Max. Score	PRO
	Observed Release	0 (45)	9	45	45	45
	if observed release	is given a score of 45, proceed to line 4. is given a score of 0, proceed to line 2.				
2	Route Characteristi Depth to Aquifer		2		5	
	Concern Net Precipitation Permeability of th Unsaturated Zon	0 1 2 3	1	. •	3	
	Physical State	0 1 2 3	1	ì	3	i .
		Total Route Characteristics Score	11		15	
3	Containment	0 1 2 3	1		3	
•	Waste Characterist Toxicity/Persiste Hazardous Waste Quantity	nce 0 3 6 9 (12) 15 18	1	12	18 8	12
		Total Waste Characteristics Score		13	26	13
3	Targets Ground Water U Distance to Neal Well/Population Served	rest 0 4 5 8 10	3	9 3 ²	9 40	9 35
		Total Targets Score		44	49	44
5		multiply 1 x 4 x 5 multiply 2 x 3 x 4 x 5		25,7	⁴⁰ 57.33	
7	Divide line 6	by 57,330 and multiply by 100	Squ	- 44	1,90	44.90

	Surface Water Route Work She	et		•	
Rating Factor	Assigned Value (Circle One)	Multi- plier	HRS	Max. Score	PRO
1 Observed Release	(a) 45	1	0	45	45
if observed release is giv	en a value of 45, proceed to line 4 en a value of 0, proceed to line 2].			
Route Characteristics Facility Slope and Inter	vening 0 1 2 3	1	O	3	
Terrain 1-yr, 24-hr. Rainfall Distance to Nearest Su	0 1 2 3 rface 0 1 2 3	1 2	2 6	3 8	_
Water Physical State	0 1 2 3	1	63	3	
	Total Route Characteristics Score	• 		15	
3 Containment	0 1 2 3	1	3	3	
Waste Characteristics Toxicity/Persistence Hazardous Waste Quantity	0 3 6 9 (2) 15 18 0 (1) 2 3 4 5 6 7	1 8 1	12	18 8	12
	Total Waste Characteristics Sco	**	13	25	13
Surface Water Use Distance to a Sensitive Environment Population Served/Disto Water Intake Downstream		3 2	(d	5	900
	Total Targets Score		(6 55	6
6 If line 1 is 45, multip	oly 1 x 4 x 5 ly 2 x 3 x 4 x 5	-	2,5	74 64.3	3,510
7 Divide line 6 by 64.	350 and multiply by 100	S 34	- 0	.04	0.05

_	e S = 0. Enter on line 3. hen proceed to line 2.	Multiplier 1 1 3 8 1	HRS	Max. Score	PRO 45
Date and Location: Sampling Protocol: If line 1 is 0, the filline 1 is 45, if the 1 is 45, if	e S = 0. Enter on line 3. then proceed to line 2.	1		3	-
Sampling Protocol: If line 1 Is 0, the filme 1 is 45, the Waste Characterist Reactivity and Incompatibility Toxicity Hazardous Waste	e S = 0. Enter on line 3. then proceed to line 2. tics 0 1 2 3	•		9	-
If line 1 is 0, the filme 1 is 45, is	te S = 0. Enter on line 5. then proceed to line 2. tics 0 1 2 3	•		9	- 1 9
Waste Characterist Reactivity and Incompatibility Toxicity Hazardous Waste	tics 0 (1) 2 3	•	· .	9	, 1 9
Reactivity and Incompatibility Toxicity Hazardous Waste	o (i) 2 3	•		9	1 9
,					
	Total Waste Characteristics Score			20	11
Targets Population Within 4-Mile Radius Distance to Sensiti Environment Land Use	0 9 12 15 18 21 24 27 30 0 1 2 3	1 2		30 8 , 3	27 0 3
Multiply 17 x 2	Total Targets Score			39	30 14,850
	opulation Within 4-Mile Radius Distance to Sensiti Environment and Use	opulation Within 4-Mile Radius Stance to Sensitive Environment and Use 0 1 2 3	Total Targets Score	Total Targets Score O 9 12 15 18 1 21 24 27 30 21 24 27 30 21 24 27 30 21 24 27 30 22 Environment 2nd Use Total Targets Score Aultiply 1 x 2 x 3	Total Targets Score 39 39 39 39 39 39 39 3

HRS	S	5 ²
Groundwater Route Score (Sgw)	44.90	2016.01
Surface Water Route Score (S _{SW})	0.04	0,002
Air Route Score (Sa)	0.00	0.00
$s_{gw}^2 + s_{sw}^2 + s_a^2$		2016,012
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2}$		44.90
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		25,95

WORKSHEET FOR COMPUTING SM

PRO	S	s²
Groundwater Route Score (Sgw)	44,90	2016.01
Surface Water Route Score (S _{SW})	0.05	\$70.003
Air Route Score (Sa)	42.31	1790.14
$s_{gw}^2 + s_{sw}^2 + s_a^2$		每3806.15
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2}$		61.69
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2} / 1.73 = s_M =$		35, ldo

WORKSHEET FOR COMPUTING SM

TENNECO CHEMICAL A.K.A. KALAMA CHEMICAL 290 RIVER ROAD GARFIELD, BERGEN COUNTY, NEW JERSEY EPA ID NO. 002005148

INDEX OF ATTACHMENTS

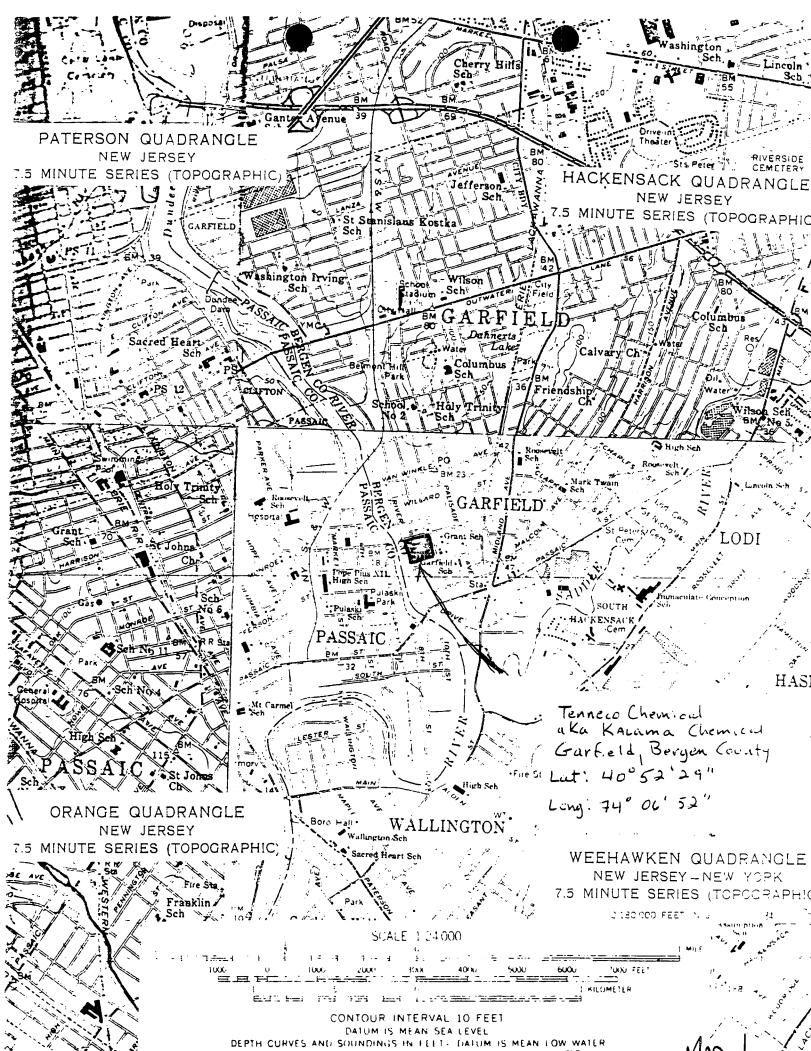
MAT'S

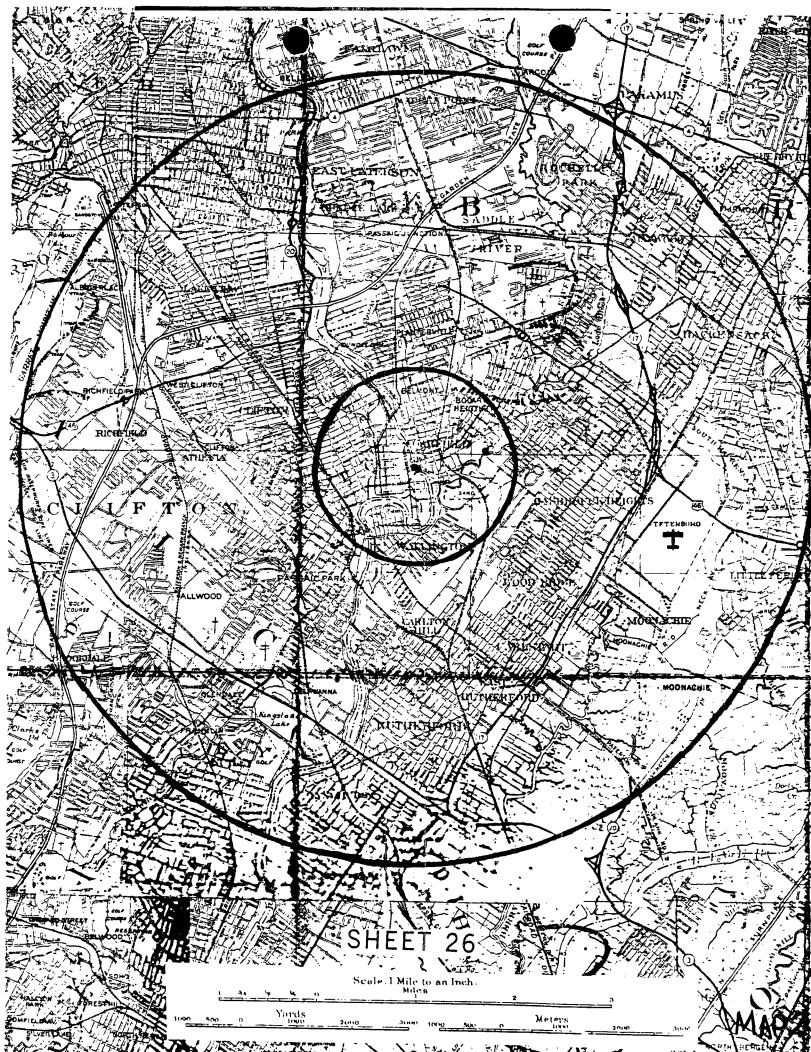
- 1. USGS WALLINGTON, HACKENSACK, PATERSON, AND ORANGE QUADRANGLES.
- NEW JERSEY ATLAS SHEET 26
- 3. NEW JERSEY ATLAS GEOLOGIC OVERLAY AND LEGEND
- NEW JERSEY ATLAS WATER SUPPLY OVERLAY AND LEGEND
- CITY OF GARFIELD TAX MAP
- HAGSTROM MAP OF BERGEN COUNTY
- 7. SITE MAP
- 8. WATER WITHDRAWAL POINTS MAP

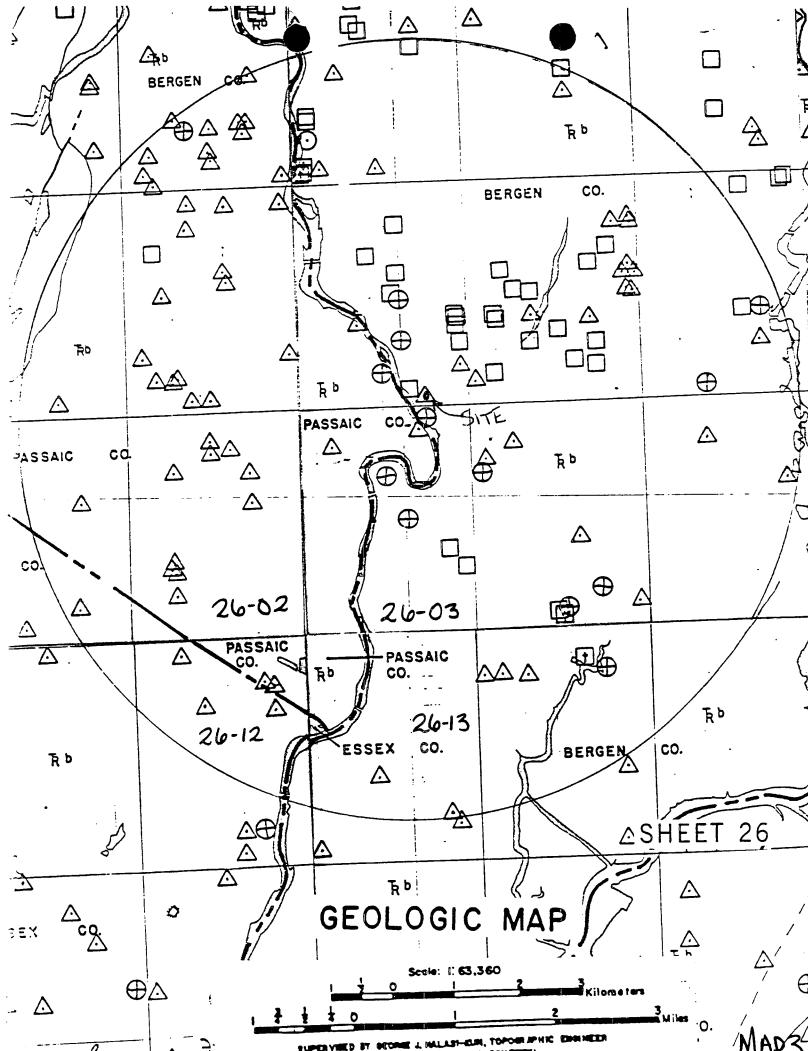
ATTACHMENTS

- A. NJDEP, DWM, ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA), INITIAL NOTICE, GENERAL INFORMATION SUBMISSION, DECEMBER 15, 1986.
- B. ECRA: SAMPLING PLAN FOR SITE EVALUATION, KALAMA CHEMICAL, INC. FACILITY, GARFIELD, NEW JERSEY, AUGUST 1987.
- C. U.S. EPA: ECKHARDT REPORT EXCERPT
- D. NJDEP, DEQ: MEMO FROM WILLIAM C. HAGGARD TO DAVE SHOTWELL, MAY 25, 1970.
- E. ECRA SOIL AND GROUNDWATER INVESTIGATION AT THE KALAMA CHEMICAL INC. FACILITY, GARFIELD, NEW JERSEY, JUNE 1988.
- F. NJDEP, DWR, METRO REGIONAL OFFICE: NJPDES PERMIT RENEWAL APPLICATION, NOVEMBER 28, 1978.
- G. LETTER FROM PAUL KURISKO, NJDEP, DWR, BUREAU OF INDUSTRIAL WASTE MANAGEMENT, TO HARI GOEL, KALAMA CHEMICAL, NOVEMBER 15, 1984.
- H. NJDEP, DWR, BUREAU OF INDUSTRIAL WASTE MANAGEMENT, PUBLIC NOTICE: ISSUANCE OF DRAFT NJPDES PERMIT, AUGUST 24, 1984.
- I. LETTER FROM WILLIAM MCELROY, NJDEP, DWR, BUREAU OF INDUSTRIAL WASTE MANAGEMENT, TO H. GOEL, KALAMA CHEMICAL, DECEMBER 2, 1987.
- J. LETTER FROM KENNETH GOLDSTEIN, NJDEP, DWR, INDUSTRIAL PRETREATMENT SECTION, TO M. CEPRINI, TENNECO CHEMCIAL, OCTOBER 19, 1982.
- K. NJDEP, DEQ: 3 MEMOS CONCERNING SPILL INCIDENTS IN 1981.
- L. NJDEP, DEQ: MEMO FROM JOHN STRONG TO FILE, JUNE 27, 1984.

- M. LETTER FROM H. GOEL, KALAMA CHEMICAL, TO RICHARD PERUSSE, NJDEP, DWR, APRIL 30, 1986.
- N. NJDEP, DWR, METRO REGIONAL OFFICE: 3 MEMOS CONCERNING APRIL 8, 1987 METHANOL SPILL.
- O. LETTER FROM RICHARD DELGADO, NJDEP, DWR, BUREAU OF INDUSTRIAL WASTE MANAGEMENT, TO H. GOEL, KALAMA CHEMICAL, APRIL 24, 1985.
- P. NJDEP, DEQ: AIR POLLUTION CERTIFICATE STACK LOG.
- Q. LETTER FROM H. GOEL, KALAMA CHEMICALS, TO WILLIAM HART, NJDEP, BUREAU OF AIR POLLUTION CONTROL, DECEMBER 17, 1982.
- R. NJDEP, DEQ: COMPLAINTS ABOUT AIR EMISSIONS.
- S. NJDEP, DEQ: ORDERS ISSUED TO KALAMA/TENNECO CHEMICAL.
- T. NJDEP, DEQ, BUREAU OF ENFORCEMENT OPERATIONS, FIELD INVESTIGATION ASSIGNMENT REPORT, JUNE 20, 1988.
- U. ECRA: PRELIMINARY INVESTIGATION OF SOIL QUALITY CONDITIONS AT THE KALAMA CHEMICAL, INC. FACILITY IN GARFIELD, NEW JERSEY, DECEMBER 1986.
- V. LETTER FROM H. GOEL, KALAMA CHEMICAL, TO G. CAPORALE, NJDEP, DWR, BUREAU OF PERMITS ADMINISTRATION, MARCH 5, 1987.
- W. LETTER FROM PETER BRUSSOCK, NJDEP, DHWM, BUREAU OF ENVIRONMENTAL EVALUATION AND CLEANUP RESPONSIBILITY ASSESSMENT, TO JARL OPGRANDE, KALAMA CHEMICAL, AUGUST 11, 1988.







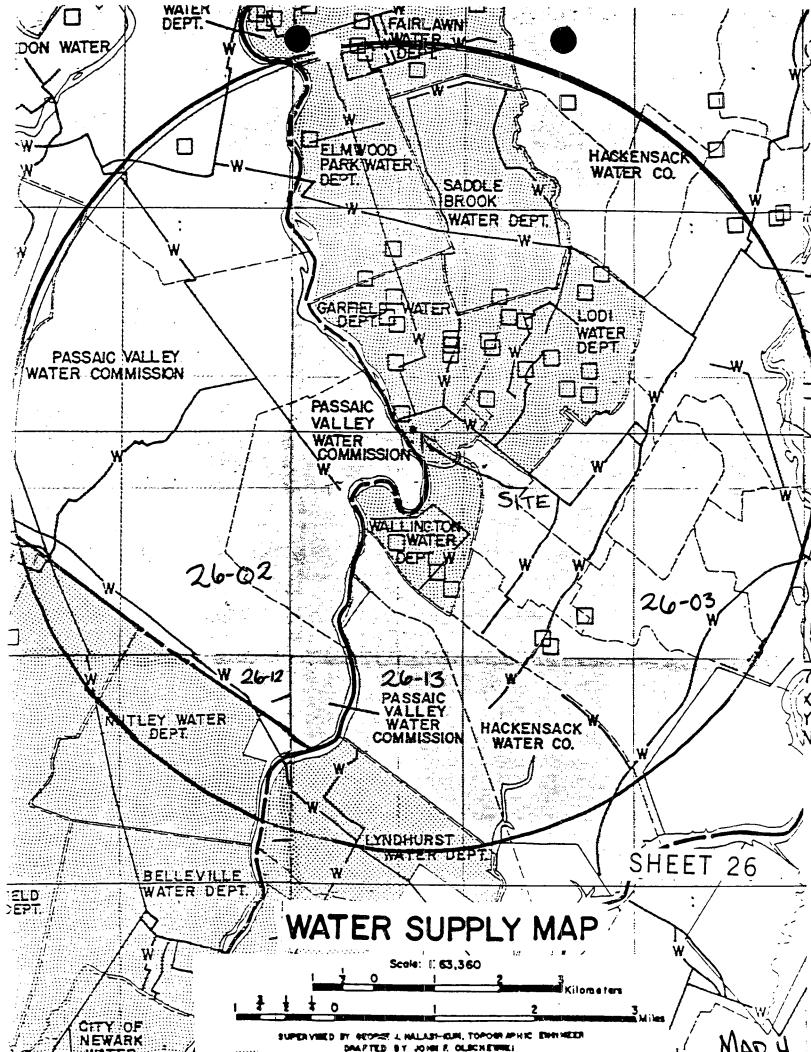
LEGEND FL. ATLAS SHEET 25 (GLULOGY)

;	
A - INDUSTRIAL WELL VIELD OVER	:
- INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE (INCLUDING - PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE	PRIVATE WELLS)
GALLONS PER MI	
WELL FIELDING LESS THAN 70 GALLONS PER A	MINUTE
T NO TEST - NO DATA ON YIELD	
•	
FAULT (DASHED WHERE INFERRED)	
CONTACT (DASHED WHERE INFERRED)	
PHYSIOGRAPHIC PROVINCE BOUNDARY	
WATER SUPPLY TRANSMISSION LINE	· · · · · · · · · · · · · · · · · · ·
NOTE: WHERE THE PRECAMBRIAN CONTACTOR	
NOTE: WHERE THE PRECAMBRIAN FORMATION BOUNDARIES TERMINATE ABRUPT IT IS THE GEOLOGIST'S OPINION THAT THE GEOLOGICAL COMPLEXITY OF T	TLY,
THE PRETERIORS.	THE
Km1 — CRETACEOUS MAGOTHY AND RARITAN FORMATIONS (SAND AND CLAY)	•
The Triassic Brunswick Formation	. <u>.</u> :
TC - TRIASSIC CONGLOMERATE BEDS OF THE STOCKTON FORMATION	
RI TRIASSIC LOCKATONS FORMATION	· · · ·
T db TRIASSIC DIABASE	, . •
To be TRIASSIC BASALT FLOWS	
Sd - SILURIAN DECKER LIMESTONE AND LONGWOOD SHALE FORMATIONS	
Sgp — SILURIAN GREEN POND CONGLOMERATE	
Omb — ORDOVICIAN MARTINSBURG SHALE	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	7 (2) 125-47
ORDOVICIAN KITTATINNY LIMESTONE	
CAMBRIAN HARDYSTON SANDSTONE	
PRECAMBRIAN:	n digitalisa di Salah br>Salah di Salah di Sa
Sh - MARMEL FARE CO. A. MAR	
gh-Hornblende Granite with Pyroxene Granite gg-Alaskite	ران محرب
dm- AMPHIBOLITE	. •
PX-PYROXENE GNEISS	
gnq-quartz plagioclase eneiss	
gnb-BIOTITE GNEISS	

M - SKARN, GRAPHITE SCHIST

LEGEND.

LEGEND.
AREA SERVED BY PRIVATE WATER SERVICE COMPANIES AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIE AREA SERVED BY MUNICIPALLY CWNED WATER SERVICE COMPANIE AREA NOT PRESENTLY SERVED BY WATER SERVICE PUBLIC SUPPLY WELLS FOR FUTURE USE MAJOR WATER MAINS
AREA SERVED BY PUBLIC SEWAGE SERVICE AREA NOT PRESENTLY SERVED BY SEWAGE SERVICE SANITARY LANDFILLS SEWAGE TREATMENT PLANTS (CAPACITY < 0.3 mgd) SEWAGE TREATMENT PLANTS (CAPACITY > 0.3 mgd) MAJOR SEWAGE TRANSMISSION LINES
DRAINAGE BASIN BOUNDARY RIVER BASIN BOUNDARY HUDSON DRAINAGE BASIN NAME STREAMS AND RIVERS FLOOD PRONE AREAS
COUNTY BOUNDARY MUNICIPAL BOUNDARY POPULATION DENSITY IN PERSONS PER SQUARE MILE AREA IN SQUARE MILES PERCENT AREA OF MUNICIPALITY ON BLOCK MARKET ROADS BUILT UP AREAS STATE BOUNDARY



8/76

- A. Orange, Paterson
- B. Passaic-Lower Passaic
- C. 1. Little Falls Recording and non-recording temperature and precipitation gauges

Paterson - Non-recording temperature and precipitation gauges

2.	Map No	• Location	Period of Record
	35	Passaic River at Little Falls	1897-
	36	Slippery Rock Brook at Barbours Pond, West Paterson	7/23/45
	27	Slippery Rock Brook at Highland Lake,	7723743
		West Paterson	7/23/45
	39	Peckman Brook at Bradford Ave., Cedar Grove	7/23/45
	43	Mollyann Brook at Squaw Lake Dam, No. Haledon	7/23/45
	45	Mollyann Brook below Redwood Ave., Paterson	7/23/45
	46	Passaic River at Paterson	1898-1955
3.	35	Passaic River at Little Falls	1962 –
	247	Passaic River at Totowa	1964-
	254	Peckman River at Cedar Grove	1964
	255	Peckman River at West Paterson	1964-

Water Quality Standards: (explained in Atlas Sheet Description) FW2 except where classified FW3

- D. Brunswick Formation (Trb), Basalt Flows (Trbs)
- E. 1. Physiographic Province: Piedmont
 Subdivision: Triassic Lowlands
 Major Topographic Features: Red Sandstone Plain, Watchung Ridges
 Elevations (ft.above sea level): ridges 600, valleys 50
 Relief (ft.): 550
 - 2. a. Normal Year: 47"
 Dry Year: 38"
 Wet Year: 59"
 - b. January: 31°F July: 74°F
 - c. 241 days. Last killing frost: 4/25; first killing frost: 10/20
- F. Passaic County:

Preakness Valley Park
Garrett Mountain Reservation
Passaic Valley:
Municipal Watershed
Cedar Grove:
Municipal Watershed

H. Westside Park/Van Houten House, Paterson Great Falls of Paterson and Society of Useful Manufactors, Historic District, Paterson

I. Water Well Records

;			Screen			
			Setting			
<u> </u>		Year	or Depth	Total	g/m	
<u>Location</u> Owner	,	Drilled	of Casing	Depth	Yield	Formation
26-02-142 Twp. of Wayne	•			?	No test	
26-02-174 Marcal Paper Pro	ducts			?	11	ni .
26-02-177				?	11	ff
26-02-221 Grand Union Co.		1955	30	41	90	11
26-02-222 Bluebird Dyeing	Corp.			65	550	***
26-02-227 Columbia Piece D				235	100	Trdb
26-02-227				100	140	11
26-02-234 Fair Lawn Dept.	of Pub.Wks.			500	85	Trb
26-02-265 35 Church St. Co	rp.	1953	32	200	75	11
26-02-265 Garden Theater		1955	3 5/8	229	200	**
26-02-273 Hudson Piece Dye	Works			450	75	Trbs-Trb
26-02-295 Passaic Rolling	M111			2100	100	Trb
26-02-312 Barbizon Corp.				300	385	11
26-02-321 Boque Electric C	0.			345	215	11
26-02-326 Spotless Cleaner	S	1965	30	400 .		11
26-02-332 Lyons Piece Dye	Works			584	85	11
26-02-332			;	600	250	11
26-02-334 Fair Lawn Dept.o		1964	40	500	85	11
26-02-335 Boro of Fair Law	n.			402	475	11
26-02-335 "				413	500	11
26-02-335 Fair Lawn Dept.o	f Pub.Wks.	1955	47	400	450	***
26-02-335		1954	53	500	75	11
26-02-342 Our Lady of Vict	ories	1954	25	300	112	11
△26-02-364 Temple Emanuel		1954	17	150	150	11
\triangle 26-02-373 - Madison Ave.Bapt	ist Church	1964	38	250	276	11
riangle 26-02-375- River Pulp Co.			•	400	350	II .
<u> ∆</u> 26-Q2-378 - Wright's Diner				220	70	11
△26-02-378 - Heller Candy Co.	, Inc.	1962	25	315	157	**
26-02-381 - Paterson Board of	f Education	1965	63	312	30	**
≥ 26-02-382- First Natl.Bank	& Trust	1953	12	200	125	FT
△26-02-385 Grand Union Co.				199	85	11
△26-02-385- Artson Realty Co.				200	100	11
△26-02-391 Okonite Co.				?	375	**
△ 26-02-391~ "				?	375	11
△26-02-391- "				?	375	***
△26-02-399 Food Fair Stores	Inc.	1955	21.5	231	150	11
26-02-416 Colorite Color Pi		1965	45/50	405	2	Trbs
26-02-424 Container Corp.of	f America	1958	32	600	65	11
26-02-426 Instrument Specia		1956	33	150	75	Trb-Trbs
26-02-447 Little Falls Laur				1012	450	Trbs
26-02-579 Bongiorne, Dr.	•			250	105	Trb -
△26-02-589 — Bolero		1954	50	350	200	11.0
☐ 26-02-618 - Pub.Svc.Elec.& Ga	as		30	400	164	11
△26-02-621— Manhattan Casting		1959	20	220	150	11
△26-02-623 Boque Electric Co		- 222	20	447	75	**
△ 26-02-624 Garafano & Son, 1	inc.	1965	24			91
△26-02-633 Independence Plat	ing Co	1954		140	201	FF
∠26-02-645 F.E.R. Realty Co.	Inc	1955	21.5	402	230	91
△26-02-653 Natl. Silk & Dyei	na Co	T300	32	307	300	11
∠, 26-02-653 - "	mg cu.			500	125	
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				600	125	11

			\bigcap	1	
\triangle 26-02-671 Shulton, Inc.	1955	15/28	300	435	Trb
△26-02-675_ "	1964	20	400	198	11
△ 26-02-676- "	1964	21	300	322	11
\triangle 26-02-676- Athenia Steel Co. ,			.389	330	11
△26-02-687 Eureka Printing Co.	1959	36/40'10"	60	282	11
\triangle 26-02-688-Federal Sweets & Biscuit Co.			400	280	11
<u> </u>	1954	45	250	105	11
26-02-763 Bonds Ice Cream, Inc.			157	150	11
26-02-783 Bellvue Theater			250	145	11
\triangle 26-02-861- Food Fair Stores			207	150	71
26-02-887 Essex Co.Park Commission			224	164	11
∠26-02-894- Brookdale Beverage	1957	46	430	85	tt .
\triangle 26-02-919 Glopro Realty Co., Inc.	1958	27	333	92	11
<u> </u>			605	250	***
26-02-925- Standard Packaging Corp.	1955	57	400	190	11
△26-02-926- Oneida Paper Prods. Co.			200	100	11
△26-02-937- Fritzsche Bros.			600	218	11
\$26-02-961 Speedway Car Wash Co.	1960	20	500	80	*1
ند 26-02-973 Grand Union Co.			102 -	80	Q-Trb
26-02-973 Brookliff Realty Co.	1962	24	301	190 -	Trb
△26-02-973 Dumont Laboratories	1958	22	305	335	11
\triangle 26-02-976 Stier, Albert A., Inc.			350	400	Q-Trb

J. Geodetic Control Survey monuments described Index Maps 15,21; adjacent Index Maps 14,20

- A. Hackensack, Orange, Paterson, Weehawken
- B. Hackensack-Hackensack; Passaic-Saddle River, Lower Passaic

C. 2.	Map No.	Location	Period of Record
	53	Passaiq River at Dundee Dam, Clifton	7/23/45
	61	Saddle River at Lodi	1923 -
	62	Weasel Brook at Clifton	1937-1961
	419	Fleischer Brook, East Paterson (Market St.)	1967-
	423	Sprout Brook at Rochelle Park	1965-
3.	242	Overpeck Creek at Ridgefield	1964-
	248	Passaic River at Garfield	1964
	264	Saddle River at Garfield	1967 -

Water Quality Standards: (explained in Atlas Sheet description) FW3, TW1 except where classified TW2 or TW3

- D. Brunswick Formation
- E. 1. Physiographic Province: Piedmont
 Subdivision: Triassic Lowlands
 Major Topographic Features: Red Sandstone Plain
 Elevations (ft.above sea level): ridges 150, valleys 0
 Relief (ft.): 150
 - 2. a. Normal Year: 45"

 Dry Year: 36"

 Wet Year: 50"
 - b. January: 31°F July: 74°F
 - c. 245 days. Last killing frost: 4/20; first killing frost: 10/20
- F. Bergen County: |
 Saddle River County Park
- H. Von Steuben House, River Edge

Screen

I. Water Well Records

			Screen			
		Year	Setting	M = 4 = 1	- 1	
Location	0wner		or Depth	Total	g/m	7
26-03-111	Boro of Fair Lawn	<u>Drilled</u>	of Casing	Depth	Yield 200	Formation
26-03-111	BOTO OF PAIR LAWIE ,			408	380	Trb
26-03-112	u .			458	280	11
	Foir Law Daine Co T	3055		500	143	
26-03-11/	Fair Lawn Dairy Co., Inc.	1955	62	205	125	11
26-03-124	Fair Lawn Water Dept.	1954	47	200	173	**
26-03-127	Fair Lawn Dept.of Pub.Wks.	1955	48/53	400	165	11
	Boro of Fair Lawn			338	245	11
	Metro Glass	1070		200	120	11
1726-03-140	Ellwood Stores Inc.	1952	22	692	100	11
136 03 171	Boro of Wallington			300	304	11
7 26 02 17/	Garfield Boro Water Dept.			330	95	11
<u> </u>	Marcal Paper Mills, Inc.	1962	25	35	35	Q
□26-03-177		1962	23	27 No	test	19
1 26-02-177	, '' 11	1962	8	20	11 '	11
□ 26-03-177	*	1962	22	30	11	37
△26-03-178	Sausville, J. & Son			300 -	100	Trb
26-03-188	Rel Plastic Corp.	1952	79	150	75	**
	Boro of Fair Lawn		•	500	65 ·	11
26-03-217	Farmland Dairies, Inc.	1974	47	635	235	**
26-03-231	All Purpose Roll Leaf	1962	71	350	100	Ħ
<u>L</u> 26-03-256-	Hackensack Water Co.	1965	77'10"	473	250	11
$\triangle 26 - 03 - 259 -$	Bijur Lubricating Corp.			175	200	TI
26-03-262	Alexander's Dept. Store	1961	25	35	290	Q
26-03-355	Hackensack Water Co.	1959			test	Trb
26-03-382	Lodi Dept.of Public Works			450	175	11
26-03-394	Spartan Typographers Inc.	1956	135	145	75	Q
26-03-394	Hackensack Cable Co.	1958	106	120	171	Trb
7 26-03-426-	East Paterson, Boro of	1954	80	200	180	11
口26-03-427-	Boro of Wallington			400	350	11
7726-03-453	City of Garfield	1966	57/77	475	77	11
<u> </u>	11	1967	33/56	400	328	11
26-03-456-	71	1966	20/43	710	30	11
	Whippany Paper Board	1956	54	250		
1326-03-469-	City of Garfield	2730	34	273	312	**
1 26-03-469-	11				95 130	11
□26-03-469-	9.0			320	130	11
26-03-483-	11	1966	21/40	165	400	**
	Botany Worsted Mills	1900	21/40	400	25	
E26-03-489-	City of Garfield	1067	63	81	7	11
126-03-493-	tt darrierd	1967	61.5	276 No		71
△26-03-496 -	Taumal Ca			326	89	**
				500	100	11
A 26 - 03 - 49 / -	Heyden Chemical Works			375	90	"
△26-03-535-	Aquarium, Inc.	1963	22	300	172	**
△26-03-536-	Maywood Chemical Co.			220	400	**
	Citro Chemical Co.			220	400	77
□ 26-03-538-				403	600	11
	City of Garfield	1968	15/35	405	405	11
	Lodi, Boro of		·	300	170	11
726-03-548	11			?	135	11
<u>-</u> 26-03-548-	11			200	125	11
口26-03-554~	Lodi Dept.of Public Works	1965	20/40	510		11
-			20,70	210	100	

\triangle 26-03-557 Washine Chemical Co.	1966	29'4"/	400	100	Trb
		46'10-1/2"			
☐26-03-561- Boro of Lod1			?	295	11
∠26-03-563 Lodi Shopping Center	1960	22	300	290	11
△26-03-563 – "	1956	20 ' 8''	301	350	**
$\angle 26-03-563$ Muscarelle, J.L., Inc.	1966	32	400	159	11
△26-03-566 - Interchemical Corp.		-	435	187	11
△26-03-566- Spiegal Mfg. Corp.	1969	34/43	300	237	19
∠26-03-567 Master Etching Corp.	1965	29	400	105	11
7\26-03-575- Boro of Lodi	1954	31'5"/	459	157	19
	255 4	53'1"	423	137	
\triangle 26-03-577- Yoo-Hoo Beverage Co.	1959	22	303	95	**
☐26-03-581- Boro of Lodi	2,5,5	22	?	145	11
1 26-03-582 Lodi Dept.of Public Works	1965	36/56	450		11
L26-03-586- Boro of Lodi	100	307 30	430 ?	175	11
□26-03-591-"	1966	28/48	•	109	11
T26-03-594- "	1900	20/40	470 350	285	11
26-03-623 Hackensack Water Co.			350	85	
26-03-632	1954		189	215	Q
	140 J 4	130/ 148 ' 3"	168	1700	••
26-03-632 "	1055		100		7.0
126-03-659- Bowler City	1955	168	190	1420	
### 26-03-667- Food Fair Stores	1958	120	400	108	Trb
#26-03-687 Spinnerin Yarn	1954	270	525	-55	11
26-03-691 Seilheimer Beverage Co.	1965	110	400	55	**
26-03-715 - Farmland Dairy Inc.	1958	115	415	76	11
\$\frac{1}{26-03-728}\$ Paterson, Parchment Paper Co.	1968	12/50	400	25	11
#26-03-731 Prescott, J.L. & Co.			378	53	1#
26-03-731 Trescott, 3.1. a Co.	1962	90	500	25	11
26-03-756 Boro of Wallington	1950	76	230	100	11
□25-03-768_ "	1964	118.5	300	30	11
□26-03-793_ " !	1965	40	400	217	**
		•	300	330	**
△26-03-816 Wright Aeronautical Eqpt.	1957		340	515	11
△26-03-817— Tube Reducing Corp.	1954	20	397	90	10
⊕26-03-817- "	1954	31	392	20	7.5
\$26-03-859— Terminal Construction Co.	1952	20	145	120	14
126-03-888- Hackensack Water Co.	1955	86	86	300	Q
<u> </u>	1955		263 N	o test	Q
\$\psi_26-03-888 - Lancaster Chemical Co.	1963	311/287	400	55	Trb
#26-03-894- Hackensack Water Co.	1955		243	60	Q
∠26-03-899_ World Plastic Extruders, Inc.	1966	53	200	100	Trb
△26-03-924-DeTroy Press, Inc.	1956	67	150	95	11.5
△26-03-962 - Stage Coach Inn		J.	565		11
			راد	110	

J. Geodetic Control Survey monuments described Index Maps 15,21; adjacent Index Map 16

A. Elizabeth, Orange

B. Arthur Kill-Elizabeth, Rahway; Hackensack-Hackensack; Passaic-Lower Passaic

С.	2.	Map No.	Location	Period of Record
		63	Second River at Brighton Ave., East Orange	7/23/38
		64	Second River at Bloomfield Ave., Bloomfield	7/23/38
			Second River at Belleville	1937-1961
		66	Second River at Newark Pipe, Belleville	7/23/33
		67	Elizabeth River at Irvington	1931-1938
	3.	262	Passaic River at Harrison	1067 1071

1967-1971

Water Quality Standards: (explained in Atlas Sheet description) FW3, TW2 except where classified TW3

- D. Brunswick Formation (Trb), Basalt Flows (Trbs)
- E. 1. Physiographic Province: Piedmont Subdivision: Triassic Lowlands Major Topographic Features: Red Sandstone Plain, Watchung Ridges Elevations (ft.above sea level): ridges 650, valleys 0 Relief (ft.): 650
 - 2. a. Normal Year: 45" Dry Year: 37" Wet Year: 55"
 - b. January: 31°F July: 74°F
 - c. 243 days. |Last killing frost: 4/15; first killing frost: 10/20
- F. Bergen County:

Riverside County Park and Hackensack River Area Essex County: Eagle Rock Reservation

Branch Brook Park

H. Montclair Railroad Terminal, Montclair Israel Crane House, Montclair Sydenham House, Newark Kruegar Mansion, Newark Penn Station, Newark First Baptist Peddie Memorial Church, Newark Saint James A.M.E., Newark Saint Stephan's Church, Newark Saint James's Church, Newark Saint Mary's Church, Newark Saint Barnabas, Newark Saint Columba's Church, Newark Saint John's Church, Newark Saint Patricks Procathedral, Newark Queen of Angels Church, Newark

H. (contd.)

Cathedral Evangelica Reformada, Newark
New Point Baptist Church, Newark
South Park Presbyterian Church, Newark
Pan American C.M.A. Church, Newark
First United Methodist Church, Newark
House of Prayer Episcopal Church and Rectory, Newark
Grace Church, Newark
North Reformed Church, Newark
The Old First Presbyterian Church, Newark
Trinity Episcopal Church, Newark

I. Water Well Records

			Screen			
			Setting			
	• •	Year	or Depth	Total	g/ma	
Location		Drilled	of Casing		<u>Yield</u>	Formation
26-12-157				505	240	Trb
26-12-164	•	1955	18	151	75	11
26-12-194		1966	21/41	300	950	11
26-12-194		1966	16/36	300	470.	11
26-12-218	•	1967	40	300	200	11
26-12-222		1956		145	100	11
	Hoffman-LaRoche			902	128	11
△26-12-327				209	70	11
	Kingsland's Paper Mills			400	125	
	Wiggins Plastics, Inc.	1963	24'-3/12"	378	180	***
<u>/26-12-338</u>	Federal Telecommunications Lab	1958	39 ' 6"	500	114	11
26-12-386	Liquid Carbonic Corp.			518	100	11
26-12-389	National Yeast Corp.			512	126	Trbs
26-12-394				802	60	Trb
26-12-417	<u> </u>			478	127	II .
26-12-423				400	400	11
26-12-448				250	75	11
26-12-449		1970	61'5"	500	524	18
26-12-478	11 .	1971	56	506	500	17
26-12-486	Colonial Life Ins. Co.			357	323	11
26-12-513	Leonora Corp.	1957	33	200	70	**
26-12-526	Eastern Tool & Mfg.Co.			550	126	12
26-12-537	National Grain & Yeast Corp.			457	125	11
26-12-545	MGM Records (Div.of Loews)	1959	23	211	115	11
26-12-545	10	1960	36	579	120	***
26-12-547	**		_	400	275	10
26-12-557	Warner Mfg. Co.			395	220	11
26-12-566				800	50	11
26-12-577		1968	18	350	200	17
26-12-622	Mansol Ceramics Co.			250	100	# 0
26-12-644	Droll Molding Co., Inc.	1962	50	300	80	11
26-12-655	Summit Chemical Prod.Corp.	2,02	J-0	414	150	***
26-12-657	Crowhurst, A.J. & Sons			83	325	
	Aluminum Finishing Co.					Q T-'
				150 250	100	Trb
	V.H. Swenson Co.	1962	49	250	123	11
20 12 075	v.n. Swenson Co.	1902	49	40	170	"

	•					
26-12-723	Mountain Ice Co.			634	300	Trb
26-12-729	Vinton Apartments Inc.	1955	52	255	160	11
26-12-747	Columbia Theaters, Inc.	1953	26	312	140	**
26-12-751	Woolworth & Co.	1965	76 ° 10''	300	80	17
26-12-758	Food Fair Stores	1956	73	214	180	11
26-12-783	Pabst Brewing Co.			535	300	11
26-12-812	Ward Baking Co.	•		200	111	**
26-12-822	Crabb, W. & Co.			600	300	77
26-12-827	Trent Hat Corp.			200	150	11
26-12-839	Reid Ice Cream Co.			600	100	**
26-12-846	Fagin Brothers Coal Yard			150	100	11
26-12-864	Barton Realty Co., Inc.	1965		385	100	11
26-12-869	Alderney Dairy Co.			450	113	11
26-12-893	Ballantine & Son Ale			1200	0	11
26-12-896	Mutual Benefit Life Ins.Co.	1965	44 '8''	312	219	11
26-12-898	Prudential Life Ins. Co.			1225	15	11
26-12-918	Abbey Record Co.	1962	24	697	135	11
26-12-921	Two Guys from Harrison	1959	99	405	628	11
26-12-933	DuPont		•	202	148	11
26-12-942	N.J. Rolling Mills	1963	99	400	20-	11
26-12-944	Harrison Supply Co.	1966	88	174	50	11
26-12-948	Mountain Ice & Fuel Co.			350	122	11
26-12-957	Doelger Brewery			400	175	11
26-12-966	Verzelano, N.	1959	146	235	150	11
26-12-976	Driver-Harris Co	1946	241	337	600	Q ·
26-12-994	Acme Refining Co.	1960	144	500	150	Trb
26-12-996	Lister Brothers			1200	0	11
26-12-998	Stanley Tools			637	125	0.6

J. Geodetic Control Survey monuments described Index Maps 21,26; adjacent Index Maps 20,25

8/76

- A. Jersey City, Orange, Weehawken
- B. Hudson-Hudson; Hackensack-Hackensack; Passaic-Lower Passaic
- C. 3. Map No. Location Period of Record 242 Berry's Creek at Moonachie, Moonachie Ave. 1964-263 Hackensack River at Harrison, Belleville Tpk. 1967-

Water Quality Standards: (explained in Atlas Sheet description) TW2 except where classified TW3

- D. Brunswick Formation (Trb), Stockton Formation (Trs), Diabase (Trdb), Manhattan Schist (Oms)
- E. 1. Physiographic Province: Piedmont Subdivision: Triassic Lowlands

Major Topographic Features: Red Sandstone Plain, Palisades Ridge, Hackensack Meadows

Elevations (ft.above sea level): ridges 250, valleys 0 Relief (ft.): 250

2. a. Normal Year: 43"

Dry Year: 36"

Wet Year: 53"

b. January: 32°F July: 74°F

c. 245 days. Last killing frost: 4/10; first killing frost: 10/20

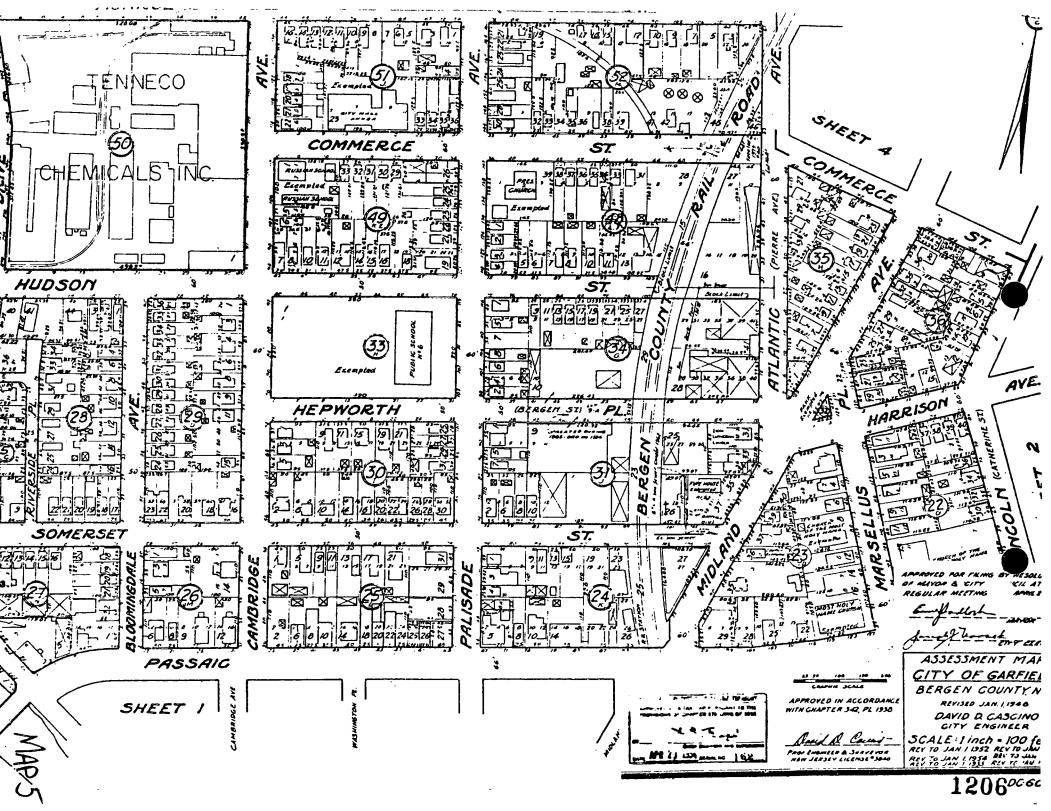
F. Bergen County:
Riverside County Park and Hackensack River Area

I. Water Well Records

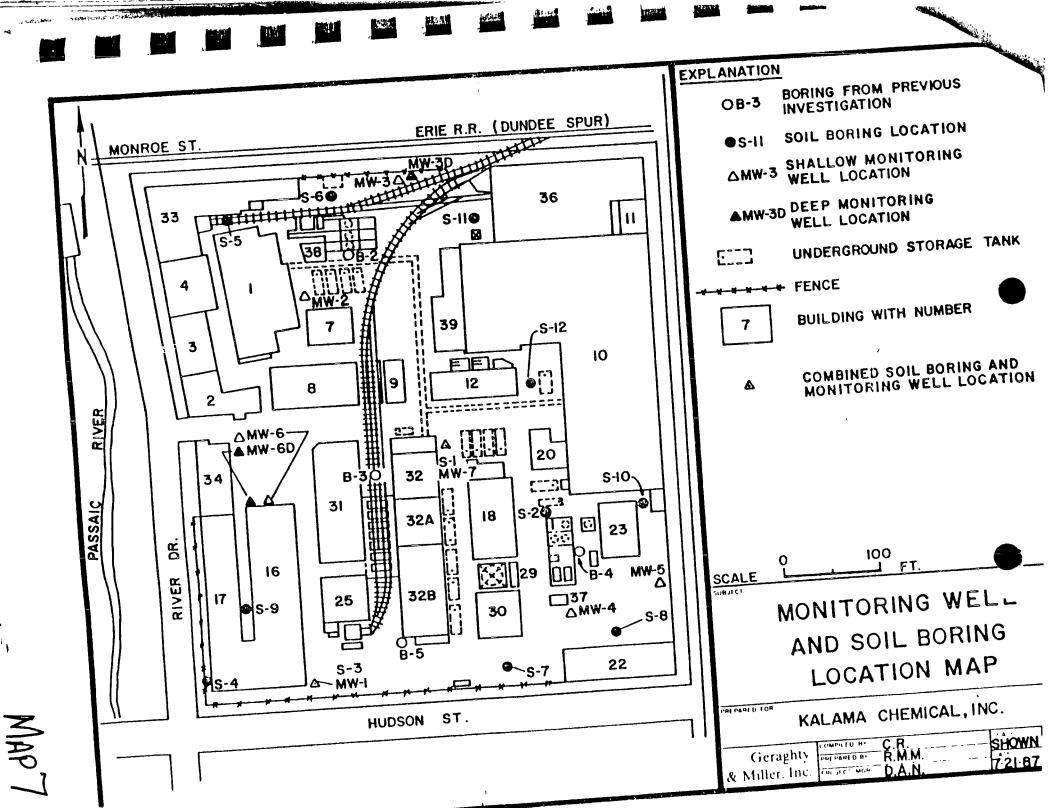
			Screen			
			Setting			
_		Year	or Depth	Total	g/m	
Location	Owner	Drilled	of Casing	Depth	Yield	Formation
26-13-157	Pennick, S.B. Co.	1966	42	352	180/200	
26-13-177	Breyer Ice Cream Co.			702	200	11
<i>-</i> ∠26-13-195	Omni Chemical Corp.	1968	39	300	157	11
€26-13-195	Sika Chemical Corp.	1966	25	302	220	11
≥ 26-13-214	Trubeck Laboratories	1956	191	201	105	Q
△ 26-13-215	Beckton & Dickinson	1966	113	363	251	Trb
26-13-216	Marijon Piece Dye Co.	1965	45	285	135	11 -
⊕ 26 - 13 - 226	Hackensack Water Co.	1954	92'11"		o test	Q
26-13-234	U.S. Printing Ink Co.	1965	70	220	60	Trb
— 26 - 13 - 268	Top Notch Plating Co.	1965	21	300	190	11
26-13-298	Alpha Refining Co.			400	115	17
26-13-415	Minit-Man Auto Car Wash	1957	39	180	90	11
26-13-447	Food Fair Stores, Inc.	1956	30	320	82	11
26-13-499	Pfaff Tool & Mfg. Co.	1963	66.5	740	145	11

26-13-598	Erie Railroad					
	n n			184	200	Trs
26-13-598	;			182	4	Trb
26-13-615	Keystone Metal Finishers	1968	20	200	312	11
26-13-642	} P#	1950	18	200	76	11
26-13-655/	6 "	1960	21	150	150	Trs
26-13-668	Kiesewetter			380	0	Trdb-Trs
26-13-695	North Bergen Realty Co.			72	90	
26-13-775	Fairmount Chemical Co.	1965	114			Q -
26-13-775	United Shellac Co.	1903	114	300	300	Trb
26-13-921	1			475	200	**
	Miller & Co.			135	925	Q
26-13-924	DeAngelis Packing Co.	1948		45	0	11
26-13-983	Mehl, John & Co.	1913		1020	150	Trdb
26-13-983	11	1923		1050	40	11
26-13-984	Mountain Ice Co.			950	0	Test Da
26-13-987	Steel Laundry Co.				_	Trdb-P6
26-13-994				1028	130	
	General Refrigerator			1350	.0	Trs-P6
26-13-995	Columbia Amusement Park			200	100	Trs

J. Geodetic Control Survey monuments described Index Maps 21,25; adjacent Index Map 16







SUBJECT TO REVISION

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 405229 LONGITUDE 740652

DRAFT

1 mile

SCALE: 1:63,360 (1 Inch = 1 Mile)

* WATER WITHDRAWAL POINTS

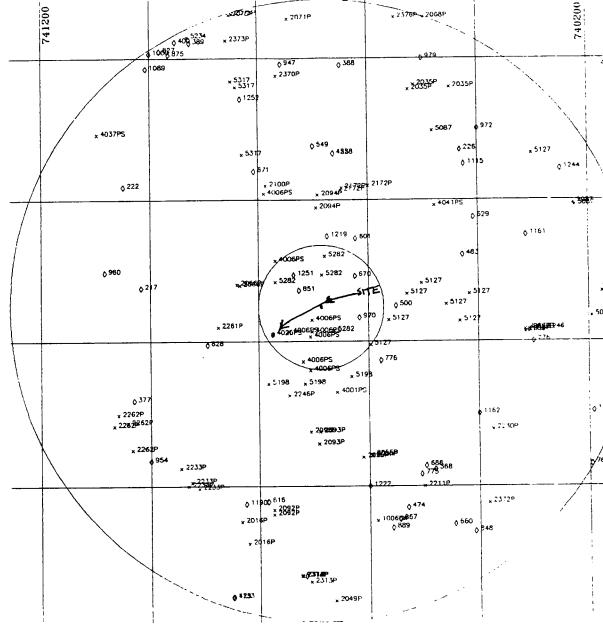
NUCS CASE INDEX SITES

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NJCS CASE INDEX DATA RETRIEVED FROM: NEW JERSEY GEOLOGICAL SURVEY ON 12/22/87

PLOT PRODUCED BY
NJDEP
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DATE 09/23/88

SUBJECT TO REVISION



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GEOLOGY LEGEND:

GTRB=Brunswick Formation SPPAS = Passaic River GQSD= Stratified Dirt SP=Unknown or Nan-specific

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA) INITIAL NOTICE

GENERAL INFORMATION SUBMISSION (GIS)

This is the first part of a two-part application form. This information must be submitted within 5 days following public release of a decision to close operations or the signing of a sales agreement or option to purchase involving an Industrial Establishment as defined in N.J.S.A. 13:1K-6, the Environmental Cleanup Responsibility Act.

SUBMIT THE ORIGINAL PLUS TWO COPIES OF THIS COMPLETED FORM AND ANY ATTACHMENTS.

Please refer to instructions and N.J.A.C. 7:1-3.7(d) before filling out this form. Answer all questions. Please print or type.

		Date: December 15, \$386.0
1. A	. Industrial Establishment:	2,5
	Name: <u>Kalama Chemical</u> , Inc.	Telephone No. (201) 779-8880
	000 D: D.	学
	City or Town: Garfield State:	NJ Zip Code: 07026 \$
	Municipality: Garfield Lot 1	County: Bergen
В.	Tax Lot Number: Lot 2	50.01 Tax Block Number: 50.02
	Standard Industrial Classification (SIC) Number:	
D.	Current Owner (Property): Name: Kalama Chemical, Inc. Firm:	Telephone No.: <u>(206)</u> 682-7890
	Street Address: 1110 Bank of California (Municipality: Seattle State:	
E.	Current Operator of Industrial Establishment: Name:same as property owner Firm:	Telephone No.:
	Street Address:	
	Municipality: State: _	Zip Code:
F.	Current Owner (Business, if different from operator): Name:same as property owner Firm:	Telephone No.:
	Street Address:	
	Municipality: State:	Zip Code:
		FOR DEP USE ONLY

Date Rec'd.

Notice No.

	G. If the Industrial Establishment discharges sanitary and/or industrial wastes to a publicly-owned treatment plant, provide the name and address of that facility.
•	Name: Passaic Valley Sewerage Commission Telephone No.: 201-344-1800
	Street Address: 600 Wilson Avenue
	Municipality: Newark State: NJ Zip Jode: 07105
	Is a septic system used (or used previously) at the site? Yes SNO
	H. Has an ECRA application been filed for this Industrial Establishment or location subsequent to January 1. 1984? Yes If so, when? N/A
	For what reason N/A
	Final disposition N/A
	I. How is this Industrial Establishment heated? (gas, oil, electricity) 011
2	List previous activities at the location(s) involved (attach additional sheets if necessary). In addition to describing the activities, list the business name(s), current address(es) and dates of ownership/operation of the previous activity(ies), if known.
	Plant originally constructed circa 1900 by Von Hayden Chemical Fabrische,
	a German firm. Closed during WWI, it was subsequently owned and operated
	by Haydon-Newport Corporation until sold in early 1965 to Tennessee Gas
	Transmission Co. (name later became Tenneco, Inc.) Kalama purchased the
	plant in December 1982 from Tenneco whose headquarters are located in
	Houston, Texas. All prior owners used this facility as a chemical plant.
3.	If the transaction initiating an ECRA review is the cessation of operations at this location, fill in the date of public release of the decision to close the facility and enclose a copy of the public announcement. Is a cession of operations involved? Yes VerNo
	Date of the public release of the decisionN/A
	Is the public release enclosed?
	If you checked "no", state the reason(s)N/A
	·
4.	If the transaction initiating an ECRA review is an agreement of sale or option to purchase, fill in the date of the execution of that instrument plus provide a copy of the document <u>December 11</u> , 1986
	A. Is a sale involved? Yes No
	B. Date of Agreement December 11, 1986
	C. Is a copy of the agreement of sale or option to purchase attached?
	If you checked "no", state the reason(s)

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operations will continue under current management. E. List other parties (purchasers) to the transaction: NAME							
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N.J. Stack No.	Certificate No.	Approval Date	Expiry Date
1	42677	5-8-84	4-7-89
12	2030	10-1-85	1-15-91
13	40430	8-18-84	9-16-89
23	581	8-18-84	11-26-88
25	60937	6-14-85	7-2-91
27	4412	8-1-86	9-8-91
28	4414	5-8-86	9-7-91
29	18328	5-8-86	5-13-91
30	31594	9-10-83	1-5-88
31	31595	9-10-83	11-2-87
32	31596	9-10-83	11-2-87
33	31597	9-10-83	11-2-87
34	31598	9-10-83	1-5-88
35	31599	9-10-83	11-2-87
36	31600	9-10-83	11-2-87
37	31601	9-10-83	11-2-87
38	31602	9-10-83	11-2-87
39	31603	4-21-83	11-2-87
40	47655	cancelled	11 2 01
41	32883	9-10-83	4-16-88
44	35398	8-1-83	3-30-88
45	35399	8-1-83	3-30-88
46	35400	8-1-83	3-30-88
47	35401	8-18-83	3-30-88
48	35391	8-18-83	3-30-88
49	35395	8-18-83	3-30-88
50	35397	8-18-83	3-30-88
53	35396	8-1-83	3-30-88
54	35392	11-26-85	3-30-88
55	35393	8-1-83	3-30-88
56	35394	8-1-83	3-30-88
57	35390	8-1-83	3-30-88
59	61449	9-10-83	6-22-87
60	61450	9-10-83	6-22-87
61	61451	9-10-83	6-22-87
62	61452	10-14-82	6-22-87
63	61453	10-14-82	6-22-87
85	42184	9-13-84	6-16-89
87	42186	5-8-84	4-7-89
88	42187	5-8-84	4-7-89
89	42188	5-8-84	4-7-89
90	42189	5-8-84	4-7-89
91	42190	5-8-84	
92	42191	8-18-84	4-7-89
93	47656	cancelled	5-27-89
	41000	Cancelled	

Stack Nos. 2 through 11; 14 through 22; 42, 51, 52, 58, 64 through 69; 75 through 82 and 84 are covered under Grandfather clause.

Stack Nos. 24, 26, 40,43, 70, 71, 72, 73, 74, 83, 86 and 90 have been cancelled and are open for future assignment, if needed.

	NUMBER	DISCHARGE ACTIVITY	DATE ISSUED OR DENIED	EXPIRATION DATE		CHARGEDINTO
	NJ0000124	Sewage	9/29/82	11/30/87	Passa: Indust	lc Valley trial Sewer
	11	Cooling wat	te <u>r 3/6/81</u>	continuous	Passai	ic River
C.	United States Env	vironmental Protec	tion Agency (EPA)	Identification Num	per and cor	ov of the most
	recent generator A	Annual Report pre	pared pursuant to th	ne New Jersey Hazar	rdous Wasti	e Regulations.
	ID • NJD OC	02005148				
	Is a copy of the A	nnuai Report attac	ched? 🔀 Yes	□ No		
D.	All other federal,	state, local governi	nental permits.			
	AGE ISSUING	-	PERMIT NUMBER	DATE C		EXPIRATION
	N/A		•	~~~~~~~~~~	COUNT	DATE
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Section 8. A. Continued

granted two extensions of the ACO. The current completion date is Dec. 31, 1986. On Sept. 29, 1986 NJDEP by letter advised us to complete our noise abatement projects by Nov. 17, 1986. All projects were completed by Nov. 14, 1986 and NJDEP was advised.

В.	. Date of Action	
	Section of Law or Statute violated	
	Type of Enforcement Action	
	Description of the Violation	
	How was the violation resolved?	
(Ad	ld additional pages, if necessary)	
٠		
THE SMI	y certify that the information furnished on this a rearing is a crime in this State. I am cognizant th t I may be personally liable for penalties up to S	pplication and any attachments is true. I am aware that at providing false information is a violation under ECRA 25,000 per day.
		Jarl L. Opgrande
		Name (Print or Type)
		V.P. Engineering and Environmental Affairs Title
		December 15. 1986

1/8

Date

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1984

I.	EPA ID Number: NJD 002005148
II.	Generator Name: Kalama Chemical Inc.
III.	Check here if there was no hazardous waste manifested during the report year.
III B.	Check here if the company is considered a small quantity generator.
IV.	Contact Person: H. A. Goel
٧.	Phone Number: (201) 779-8880
VI.	Annual total of waste generated (Attachment) 2000 lbs
VII.	Company information verification (Attachment)
viii.	Certification
	I certify that the information given in this annual report is true accurate and complete.
	H. A. Goel M. 3/1/85
	(Print or type name) (Signature) (Date)

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Page	1	of	1

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION MANIFEST SECTION GENERATOR ANNUAL REPORT 1984

1.	Generator Name:	Kalama Chemical Inc.	_ EPA ID No	NJD 00200514	8
	Site Address:	290 River Drive, Garfi	eld, N.J. 0702	6	
2.	Transporter Name	: American Recovery	_ EPA ID No	MDD 074923392	
3.	TSD Facility Nam	e: American Recovery	_ EPA ID No	MDD 074923392	
	TSDF Address:	1901 Birch Street, Ba	ltimore, MD		
·.	Waste Information	a:			
	Waste Type	Waste Description	DOT Haz Class	Total Quantity	Units
	X910	Hazardous Waste Solids NOS	ORM-E	2000	Lbs

NOTE: For each combination of transporter and TSD facility, list the total quantity manifested for each waste type.

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30

31

32

33

43 47

59 1.0 SIC CODE:

COMPANY TYPE:

GEN-

AMENDMENT TO TENDER OFFER AGREEMENT

This Amendment to Tender Offer Agreement is made as of December 11, 1986 by and between The British Columbia Sugar Refining Company, Limited, a Canada corporation, and Kalama Chemical, Inc., a Washington corporation, for the purpose of amending the Tender Offer Agreement (the "Tender Offer Agreement") made as of November 14, 1986 by and between the parties:

- Definitions. Capitalized terms not defined herein shall have the meanings set forth in the Tender Offer Agreement.
- 2. Amendments. The following Sections of the Tender Offer Agreement are hereby amended in their entirety to provide as follows:
 - 2.01 Shares Required. There shall have been tendered to B.C. Sugar sufficient shares of Common Stock and Subordinated Notes so that, (i) following the initial Closing, B.C. Sugar will own not less than 45%, but less than 50%, of the then outstanding Common Stock, and (ii) following the exchange of Subordinated Notes for Common Stock as provided in Section 3 below, B.C. Sugar will hold not less than 51% nor more than 55% of the then outstanding Common Stock. All Common Stock and Subordinated Notes tendered by persons other than Palmer and Kirchner will be purchased and no shares of Common Stock will be purchased from Palmer and Kirchner.
 - Exchange of Subordinated Notes. At B.C. Sugar's option (exerciseable by giving five (5) days prior written notice), B.C. Sugar may require Kalama to issue to B.C. Sugar, in exchange for all Subordinated Notes purchased by B.C. Sugar and tendered to Kalama, shares of Common Stock at an exchange rate of one hundred sixty (160) shares of Common Stock for each \$1,000 face value of Subordinated Notes, and B.C. Sugar agrees to accept such Common stock as payment of such Subordinated Notes. The foregoing option may be exercised at any time after the earlier of (i) November 1, 1987, or (ii) a date on which a "change in ownership" [as defined in the New Jersey Environmental Cleanup Responsibility Act (N.J.S.A. 13:1K-8(b))] of Kalama may occur without the requirement of obtaining a surety bond or other financial security as provided in N.J.S.A. 13:1K-9(b)(3). Kalama agrees at all times to maintain sufficient authorized but unissued shares, or treasury

shares, for delivery to B.C. Sugar upon exercise of the foregoing option.

- 4. Closing. The closing ("Closing") shall occur on a date selected by B.C. Sugar on or following the date on which sufficient shares of Common Stock and Subordinated Notes shall have been tendered to enable B.C. Sugar to acquire the number of shares required under Section 2.01. Closing shall be at the offices of Kalama, or at such other place in Seattle as may be designated by B.C. Sugar. In no event shall Closing occur after 5:00 p.m. on December 31, 1986.
- 5.02 <u>Sufficient Tender</u>. These shall have been tendered sufficient shares of Common Stock and Subordinated Notes to enable B.C. Sugar to acquire the number of shares required under Section 2.01.
- 5.06 <u>Fairness Opinion</u>. Kalama shall have received a favorable opinion from Dain Bosworth Incorporated as to the "fairness" of the transactions contemplated by the Tender Offer Agreement as amended hereby.
- 5.11 <u>Legal Opinion</u>. B.C. Sugar shall have received the written opinion of Bogle & Gates substantially in the form of annexed Exhibit A dated as of the initial Closing.
- 3. Palmer Put/Option Agreement. The number of shares of Kalama Common Stock constituting "Palmer Stock" under the Palmer Put/Option Agreement shall be increased from 363,500 to 366,000 shares.
- 4. Actions Under ECRA. Kalama agrees that it will give notice to the New Jersey Department of Environmental Protection as required by N.J.S.A. 13:1K-9(b)(1) and will use its best efforts to promptly comply with the provisions of the New Jersey Environmental Cleanup Responsibility Act in order to permit a "change in ownership" of Kalama (as defined therein) to occur as provided therein.
- 5. <u>Ratification</u>. Except as amended hereby, the parties ratify and confirm the terms and conditions of the Tender Offer Agreement.
- 6. Counterpart Execution. This Agreement may be executed by the parties in separate counterparts, each of which shall be

deemed an original and all of which taken together shall constitute one and the same agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

THE BRITISH COLUMBIA SUGAR REFINING COMPANY, LIMITED

By /s/ John G. Cochrane
Its Vice President

KALAMA CHEMICAL, INC.

By /s/ Ted W. Palmer
Its_Chairman

SAMPLING PLAN FOR SITE EVALUATION KALAMA CHEMICAL, INC. FACILITY GARFIELD, NEW JERSEY

August 1987

#86373

Geraghty & Miller, Inc. 7 Atlantic Street Hackensack, New Jersey 07601

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GERAGHTY & MILLER, INC.

SAMPLING PLAN FOR SITE EVALUATION KALAMA CHEMICAL, INC. FACILITY GARFIELD, NEW JERSEY

INTRODUCTION

In March 1987, Geraghty & Miller, Inc. was retained by Kalama Chemical, Inc. to prepare a sampling plan as part of the Site Evaluation Submission required under New Jersey's Environmental Cleanup Responsibility Act (ECRA), in compliance with N.J.A.C. 7:1-3. This workplan has been prepared in accordance with the Draft Sampling Plan Guide for ECRA, issued by the New Jersey Department of Environmental Protection (NJDEP), Bureau of Industrial Site Evaluation (BISE), in June 1986.

BACKGROUND

The Kalama Chemical site is located on River Drive in the City of Garfield, on the east bank of the Passaic River. The area is characterized by mixed commercial and residential use, with a number of gasoline stations and small retail stores located near the plant. The site location is shown on a 7.5 minute series topographic map (Figure 1).

Site History

The plant has been the site of the manufacture of salicylic acid since 1903. During the same period, formaldehyde and methyl salicylate were also manufactured. During 1940's the manufacture of Parasepts (methyl, propyl, ethyl and butyl esters of parahydroxybenzoic acid) was started. Soon after, the production of methylene disalicylic acid (M.D.A.) commenced. The manufacturing facility for benzoic acid and benzaldehyde was constructed in 1967. During the 1970's, the plant started manufacturing sodium, potassium, and magnesium salicylate salts. The production of formaldehyde was discontinued in 1982. Benzoic acid and benzaldehyde production was permanently shut down in early 1984. Other products are still manufactured at the facility. The plant has not manufactured any chlorinated organic compounds.

Available records indicate that the original site contained Buildings 1, 2, 3, 4, and 33 in 1903. Buildings 8, 9, 12, 31, and 32 were added between 1910 and 1920, and other buildings were added during the 1940's and 1950's. No major buildings have been added since the late 1950's.

Toluene was used at the site as a raw material for the production of benzoic acid and benzaldehyde in the air oxidation process. Phenol

Registered U.S. trademark of Kalama Chemical, Inc.

and sodium hydroxide are currently used as raw materials for the production of salicylic acid in the carboxylation process. Methyl salicylate is manufactured by the esterification of salicylic acid and methyl alcohol, with sulfuric acid used as a catalyst. Formaldehyde was formerly produced by the catalytic oxidation of methanol.

There are a total of 25 underground storage tanks at the facility. Of these, the product has been removed from 18 tanks, and these tanks have been filled with water. Of the seven tanks currently in use, three (3) contain No. 6 fuel oil, one (1) contains No. 2 fuel oil, one (1) contains toluene, and two (2) contain methanol.

Site Topography and Drainage

The plant area is almost entirely paved, with the exception of a few small areas. The facility has a parmit to discharge its storm water runoff, along with cooling water, to the Passaic River. The process wastewater and sanitary sewage are disposed through sewers to the Passaic Valley Sewage Authority. The site has no on-site water bodies, dry wells, or detention ponds. Storm water runoff from the site is collected through storm sewers, and is discharged to the Passaic River.

<u>Geology</u>

The site is underlain by an unknown thickness of unconsolidated deposits, which consist of a heterogeneous mixture of alluvial sand, silt, and clay, and man-made fill. Published reports indicate that the thickness of the unconsolidated materials is in excess of 75 feet in this portion of the Passaic River Valley (Carswell and Rooney, 1976).

<u>Hydrogeology</u>

A previous soil boring program (Geraghty & Miller, Inc., 1986) indicated that ground water was encountered at depths ranging from 2.5 to 12 feet below ground surface. It is anticipated that the general direction of ground-water flow in the unconsolidated deposits would be from the plant site towards the river. The monitoring wells proposed in this sampling plan will allow for an assessment of shallow ground-water flow in the uppermost saturated unit.

Previous Soil Sampling

Geraghty & Miller, Inc. conducted a soil investigation program in selected areas of the facility in June 1986. The locations of these soil borings are shown on Figure 2. The rationale for the selection of boring locations was as follows:

- B-1: This area is located near Shipping Building 16 and the Administrative Building (Building 34).
- B-2: Underground storage tanks containing methanol and No. 6 fuel oil for the boilers are located in this area.
- B-3: This area is used for loading and unloading of chemicals from tank trucks and tank cars. This area was also used in the past for the loading of formaldehyde.
- B-4: Benzoic acid reactors and other distillation towers for the manufacturing of benzoic acid and benzaldehyde are located in this area. This area is adjacent to the benzaldehyde storage tanks.
- B-5: This area is outside Building 32, which is used for shipping chemicals by trucks. Process sewer lines from the benzoic acid/benzaldehyde production area pass within a few feet of this boring.

The depth of these borings ranged from 8 to 12 feet. Soil samples were collected from various depths and were analyzed for volatile organic compounds, base/neutral extractable organic compounds, acid extractable organic compounds, total petroleum hydrocarbons, alcohols, total phenols, formaldehyde, benzaldehyde, and benzoic acid. The results of these analyses are summarized in Tables 1 and 2.

SAMPLING PROGRAM

Purpose and Areas of Environmental Concern

The purpose of this sampling plan is to identify areas of potential environmental concern, document the environmental quality of the site, and provide data regarding the extent, if any, of existing contamination. The following is a list of areas of environmental concern that have been considered in formulating the sampling plan:

- 1. Underground storage tanks.
- 2. Loading/unloading areas.
- 3. Drum and scrap material storage area.
- 4. Former benzoic acid/benzaldehyde production area.
- 5. Open areas downgradient of production/operation areas.

The media to be sampled include unsaturated soils (above the water table) and the ground water in the unconsolidated deposits (uppermost saturated unit). Soil borings and monitoring wells will be the prime methods of soil and ground-water sample collection.

The above listed problem areas will be adequately addressed by precision testing of tanks and collection and analysis of soil and ground-water samples. Depending upon the results of tank tests, additional soil borings would be included in the field sampling phase.

Tank Testing

There are a strange tanks, with capacities ranging 1.000 to 16,500 gallons each. All tanks are made of steel. As stated in the site history, only seven (7) tanks are currently in use. These seven tanks will be tested for

leaks. It is Kalama's intention to ultimately discontinue the use of all underground storage tanks and remove those that can be safely excavated from the ground. An accepted test procedure, in conformance with Criterion 329 of the NFPA, will be employed for detecting potential tank leaks. Details of two potential tank testing procedures are presented in Appendix A.

For those tanks that are removed from the ground (in accordance with NFPA 3.29 criterion), additional soil samples will be taken after removal. The location and number of soil samples will be based on vapor monitoring results in the excavation, using field instrumentation around tanks that show indications of leakage. Additional soil samples will be obtained, and be analyzed for total petroleum hydrocarbons or for the chemicals previously stored in these tanks. The magnitude and extent of contamination will be assessed in this manner.

Soil

Representative soil borings in each of the outlined areas will be drilled, and soil samples will be selected for chemical analysis. At present, twelve (12) soil borings are recommended in the areas of environmental concern listed on the previous page. The locations of these soil borings are shown on Figure 2. The following is the rationale for selecting soil sampling locations:

(a) <u>Underground Storage Tanks</u>

At present, soil borings S-1 and S-2 are intended to provide an indication of soil quality near the underground storage tanks adjacent to Buildings 18 and 32, and around the No. 2 fuel oil tank in the benzoic acid/benzaldehyde production area. Based the results of tank testing, additional soil borings may be required around leaking tanks to determine the magnitude of impacts to soil quality.

(b) Loading/Unloading Areas

Soil borings B-3 and B-5, drilled in the preliminary soil sampling program (Geraghty & Miller, Inc., 1986), indicated the presence of volatile organic compounds in soil in the vicinity of the former formaldehyde shipping and transfer area; the analytical data are presented in Table 2. Two additional soil borings (S-3 and S-4) are proposed in proximity to the former extension of the rail siding and near the process sewer lines and shipping areas (Building 32), in order to further assess the extent of soil contamination. In addition, soil borings S-5 and S-6 will be sampled along the railroad on the northern part of the facility, as this area was reportedly also a site of chemical transfer in the past.

(c) Drum and Scrap Metal Storage Area

Soil boring S-7 is intended to provide an indication of soil quality conditions in the scrap materials storage area. Soil boring S-8 will provide data regarding soil conditions near Building No. 22, where drums are stored. Boring S-9 is to be located between Building 16 and 17, as this area is often used for temporary storage of drummed laboratory chemicals.

(d) Former Benzoic Acid/Benzaldehyde Production Area

Soil boring B-4 from the previous investigation (Geraghty & Miller, Inc., 1986) showed relatively high concentrations of volatile organic compounds (toluene, benzene, methylene chloride, and 1,1,2,2-tetrachlorethane) in soil (see Table 2). Three additional soil samples (one shallow sample from S-2 and two soil samples, one each from S-10 and MW-4) would be collected for chemical analysis. It should be pointed out that a deeper soil sample from S-2 (see section (a) Underground Storage Tanks) will be analyzed for petroleum hydrocarbons, to provide an indication of the potential for tank leakage.

(e) Open Areas Downgradient of Production Operations

At present, it is proposed to collect two soil samples (soil borings S-11 and S-12) downgradient of the present salicylic acid/salicylate production area.

All soil borings will be drilled by a driller licensed in the State of New Jersey, in accordance with the protocol presented in Appendix B; the soil samples will be collected in accordance with the protocol presented in Appendix C. The proposed analytical parameters are summarized in Table 3. Abandonment of borings will be according to the NUDEP-approved procedures, which are delineated in the Draft ECRA Sampling Plan Guide (NUDEP, 1986).

Ground-Water Monitoring Wells

Ground-water monitoring wells will be installed in order to provide data relative to potential impacts to ground-water quality in specific areas of concern, and to define general ground-water flow and ground-water quality conditions in the uppermost saturated unit underlying the site. It is proposed to install six (6) shallow monitoring wells, with screen settings that bridge the water table, so that any floating product, if present, can be detected. In addition, it is proposed to install two (2) deeper monitoring wells, adjacent to two (2) of the shallow wells, in order to provide data regarding the vertical component of ground-water flow in the uppermost saturated hydrogeologic unit.

The six (6) shallow monitoring wells will be constructed with 20 feet of screen, with approximately five (5) feet of the screen above the water table, and fifteen (15) feet below the water table. Since it is anticipated that the water table occurs between five and fifteen feet below land surface under most of the facility, the six (6) shallow monitoring wells will be approximately 20 to 30 feet deep. The two (2) deeper monitoring wells will be screened approximately in the interval between 40 and 50 feet (using ten feet of screen). The

rationale for the selection of each monitoring well location is presented below:

Monitoring Well MW-1: This well is located in an anticipated downgradient direction from the loading/unloading area between Buildings 32, 32A, and 32B and 31 and 25 and the scrap material storage area along Hudson Street. In addition, this proposed well will provide data regarding potential impacts to ground-water quality resulting from the old sewer that is situated between Hudson Street and the plant, and is currently capped off.

Monitoring Well MW-2: This well is located between the boiler house (Building No. 1) and the underground storage tanks for No. 6 fuel oil. This monitoring well is intended to be downgradient of the tank farm near Building 38; methanol and No. 6 fuel oil are stored in this tank farm.

Monitoring Wells MW-3 and MW-3D: MW-3 is intended to serve as an upgradient (background) well, as it is anticipated that this location is in an area that is upgradient of all or most of the facility. In addition, a deeper (50 ft) monitoring well is proposed in this area (MW-3D) in order to provide data regarding the vertical component of ground-water flow.

Monitoring Wells MW-4 and MW-5: MW-4 and MW-5 are proposed to provide data regarding potential impacts to ground-water quality in the former benzoic acid/benzaldehyde production area. MW-4 is located in an anticipated downgradient direction of the production area, and MW-5 is located in an anticipated upgradient direction.

Monitoring Wells MW-6 and MW-6D: This well is proposed at the western edge of the facility (near Administrative Building 34), in order to provide data regarding the quality of ground water flowing from the facility towards the Passaic River. In addition, it is proposed to install a deeper (50 ft) monitoring well at this site (MW-6D), in order to provide data regarding the vertical component of ground-water flow.

The monitoring wells will be installed by a driller licensed in the State of New Jersey, in accordance with the protocol presented in Appendix B. The drilled samples will be collected as described in Appendix C. It is proposed to construct the monitoring wells with 4-inch diameter PVC casing and screen. Each shallow monitoring well would have 20 feet of screen with 5 feet of the screen above the water table; the two deeper monitoring wells will be constructed with ten (10) feet of screen, set in the interval approximately 40 to 50 feet below land surface. The wells will be developed in accordance with the procedures delineated in Appendix B. The monitoring wells will be sampled for the parameters listed in Table 3. Protocols for the collection, handling, and analysis of ground-water samples are presented in Appendix D.

Health & Safety

A site-specific Health and Safety Plan is presented in Appendix E. This plan will be closely followed during all field investigative activities.

13:



PHONE 201 773 3440 TWX 710 989 7001

August 13, 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Leonid Carnett
NJ Department of Environmental Protection
Division of Hazardous Waste Management
Bureau of Industrial Site Evaluation
C N 028
Trenton, NJ 08625

RE: ECRA CASE NO. 86B73

Dear Mr. Carnett:

Please find attached the following items which were either missing or partially addressed in our earlier submittal of Site Evaluation Submission (ECRA-2):

- a. A check in the amount of \$1,000.00.
- b. A site plan showing property boundries and paved vs unpaved areas (Item #9).
- c. A site plan showing locations of underground storage tanks, above ground storage tanks and drum storage areas, (Item 11A). Please note that there are a total of 25 Underground Storage Tanks (UGST's) (Item 11b).
- d) Three copies of the sampling plan.
- e) A completed copy of Hydrogeologic Assessment form (ECRA Program).

As requested in our earlier submittal on January 9, 1987, we would like your the contents of our entire ECRA-2 submittal CONTIDENTIAL since the information contained therein pertains to proprietary manufacturing operations and processes.

If you have any questions, please call me at (201)779-8880.

Very truly yours,

KALAMA CHEMICAL INC.

H.A. Goel

Technical Superintendent

HAG/caf

RIT

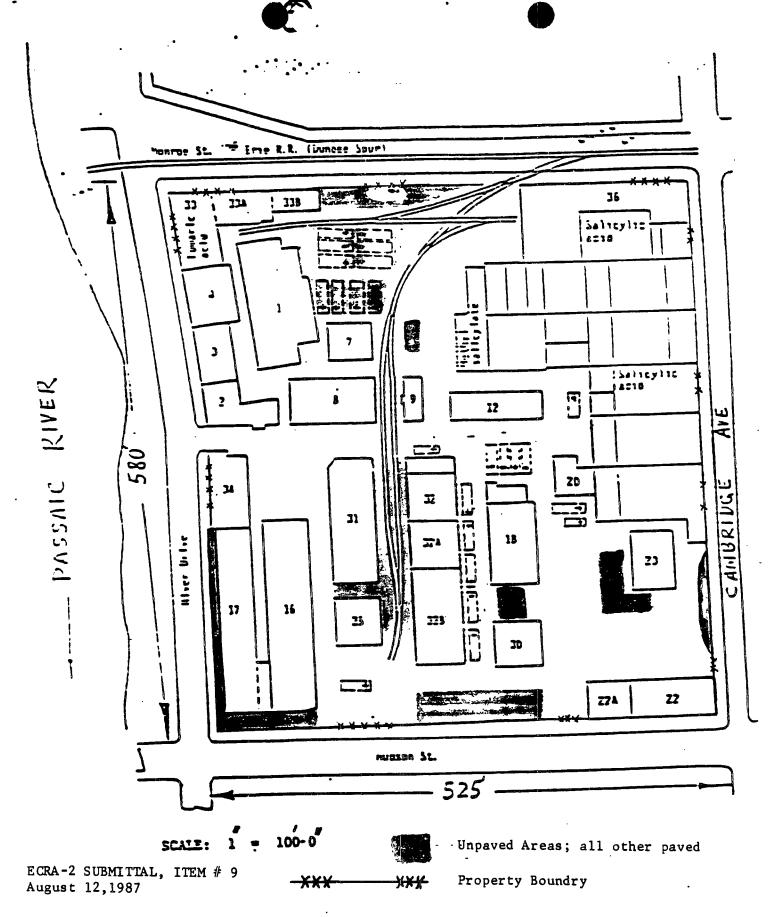


Figure 2. Kalama Chemical's Garfield, New Jersey Site Plan showing property boundries and paved-unpaved areas

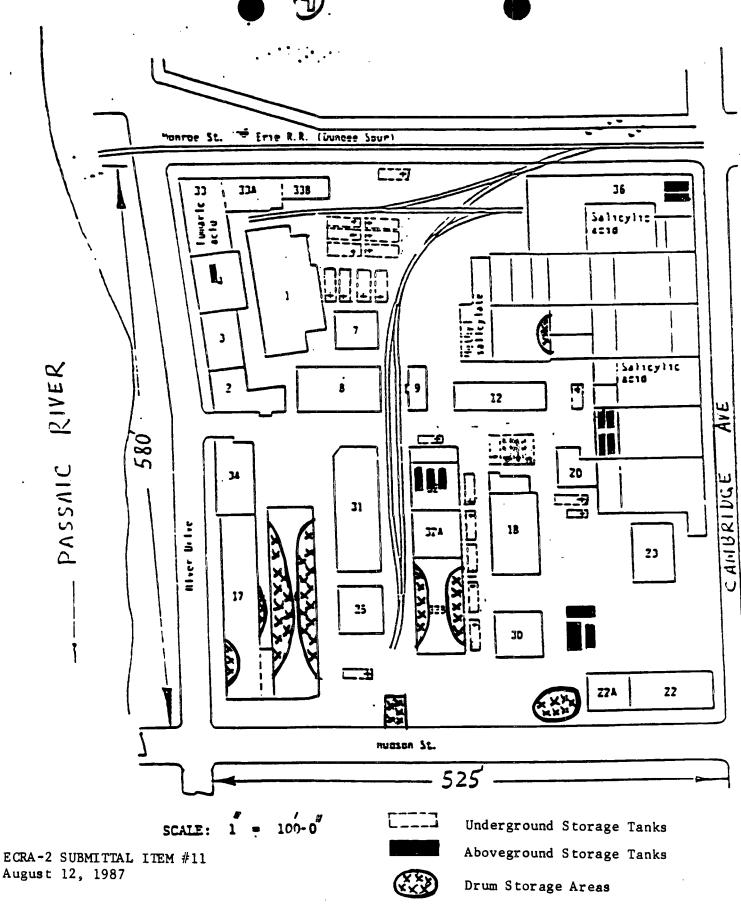


Figure 1. Kalama Chemical's garfield, New Jersey Site Plan showing underground tanks, aboveground tanks and drum storage areas

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NEW JERSEY GEOLOGICAL SURVEY

Appendix	•	

REQUEST FOR HYDROGEOLOGIC ASSESSMENT - ECRA PROGRAM

(To be completed whenever groundwater sampling is proposed or required as part of a Sampling ?!an)

Preparer H. Goel			Date8/	/5/87
Name of Industrial Establishment Ka.	lama Chemical	Inc.		
Address 290 River Drive				
City/Township Garfield, NJ		County _	Bergen	
USGS Quadrangle Hackensack, Ora	ange, Paterso	n and Wee	hawken	(New Jersey)
Latitude 40 52 · 05	5 "Longatud	ie <u>74</u>	06	38
1. Attach a site map or photo copy of the in RED and any relevant information	te USGS "Quad" wi (e.g., analyses, well	th the location logs, etc.)	on of the site	curcled or outlined
2. A. Are wells nearby?	□ No			
B. Are wells contaminated?	Yes 🗆 No (Not known	ı)	
C. Is there an imminent health haza	rd to your knowled	ge? 🗀 Y	es ØN	io
 C. Is there an imminent health haza D. Mark the location of any known mation is available. (Use back of 	wells near the facili	ty, and some		
D. Mark the location of any known	wells near the facili	ty, and some		
D. Mark the location of any known mation is available. (Use back of	wells near the facili sheet for additional DISTANCE FROM	ty, and come i remarks, , DEPTH	ete ine folk	owing if such infor-
D. Mark the location of any known mation is available. (Use back of well owner	wells near the facili sheet for additiona DISTANCE FROM SITE (ft)	ty, and come i remarks, , DEPTH	:ete ine folk	owing if such infor-
D. Mark the location of any known mation is available. (Use back of well owner. Lodi Borough	wells near the facilities sheet for additional DISTANCE FROM SITE (ft) 1.48 Mile	ty, and some interest of the period of the p	use: P	owing if such infor-
D. Mark the location of any known mation is available. (Use back of well owner Lodi Borough Garfield Water Dept.	wells near the facility sheet for additional DISTANCE FROM SITE (ft) 1.48 Mile 0.42 **	perth	use: P	owing if such infor-
D. Mark the location of any known mation is available. (Use back of well owner Lodi Borough Garfield Water Dept. Garfield Water Dept.	wells near the facilities sheet for additional DISTANCE FROM SITE (ff) 1.48 Mile 0.42 ** 0.86 **	DEPTH 607 276	use: P P	owing if such infor-

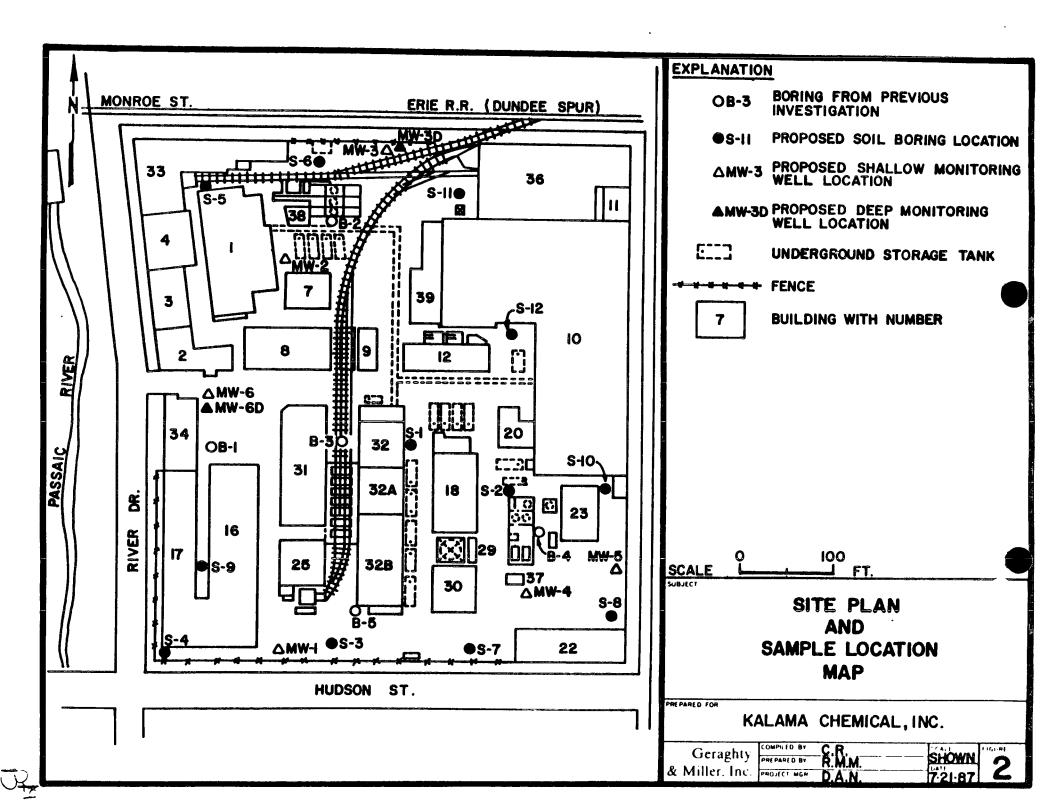
3. Briefly describe the nature of the operation active/inactive at this facility.

The Kalama Chemical Inc., Garfield facility is an organic chemical manufacturing plant. The plant has been the site of the manufacture of various chemicals since 1903. Currently we manufacture Salicylic Acid, Methyl Salicylate and other special preservative chemicals.

Benzoic Acid and Benzaldehyde manufacturing ceased in early 1984 and Formaldehyde manufacturing operations was discontinued in late 1982.

^{*} P = Public Supply F = irregation | I = Industrial | M = Monitoring | D = Domestic

♣.	Check known of suspected sources of ground water of soil contamination:
	☐ Drums ☐ Spill(s) ☐ Ligoon(s) ☐ Septic Tank(s) ☐ Seepage Pit(s) ☐ Below-ground Storage ☐ Above-ground Storage ☐ Lindfill(s) ☐ Industrial Accident ☐ Discharge(s) onto Ground ☐ Other — Explain Below
5 .	Additional Comments
	The 1986 Soil Boring Study conducted by Geraghty & Miller Inc.
	showed relatively high concentration of volatile organic compounds
	in the former benzoic acid/benzaldehyde manufacturing area. The
	suspected source of contamination, in this case, may be spills
	resulting from production operations. The proposed sampling plan
	including testing and/or removal of underground storage tank
	will tell us if additional sources of contamination may be present



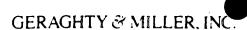


Table 1: Concentrations of Miscellaneous Parameters in Soil Samples (Geraghty & Miller, Inc., 1986)

	B-1	B-2	B-3	B-4*	B-5*
Total Petroleum Hydrocarbons	ND	ND	1070	236	100
Benzoic Acid				ND	
Benzaldehyde			ND	ND	
Formaldehyde			ND		ND
Total Phenolics			9.	.6	9.3
Alcohols		ND			ND

Notes:

Blank = not analyzed.
ND = not detected.
* Composite sample.

All concentrations in ppm.

Analysis performed by General Testing Corporation of Hackensack, NJ.

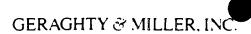


Table 2: Concentrations of Organic Compounds in Soil Samples (Geraghty & Miller, Inc., 1986)

	B-1	B-2	B-3	B-4	B-5								
Volatile Organic Compounds													
Benzene Toluene Ethylbenzene Methylene Chloride 1,1,1-Trichloroethane Dibromochloromethane Bromoform 1,1,2,2-Tetrachloroethane	ND 0.0097 ND ND 0.0036 0.011 0.035 ND	ND 0.011 ND ND 0.017 ND ND ND	ND 0.116 ND ND 0.020 ND ND	15.0 2470.0 ND 15.0 ND ND ND	0.066 0.730 0.0042 ND ND ND ND								
Acid Extractable Organic Comp	Acid Extractable Organic Compounds												
	B-1	B-2	B-3	B-4	B-5								
Phenol		0.0941	0.232	0.341	19.800								

Base/Neutral Extractable Organic Compounds

	<u>B-1</u>	B-2	B-3	B-4	B-5
Anthracene		0.0979	ND	ND	ND
Benzo (a) anthracene		0.743	ND	BMDL	ND
Benzo (a) pyrene		0.459	ND	0.129	ND
Benzo (b) fluoroanthene	,	0.836	ND	ND	ND
Benzo (ghi) perylene		0.322	ND	ND	ND
Benzo (k) fluoranthene		ND	ND	0.422	ND
bis (2-Ethylhexyl) phthalate		0.654	ND	ND	1.30
Butyl benzyl phthalate		ND	ND	BMDL	BMDL
Chrysene		0.377	ND	0.299	ND
Di-n-butyl phthalate		BMDL	BMDL	0.408	BMDL
Fluoranthene		1.16	HMDL	1.90	ND
Fluorene		ND	ND	0.600	0.379
Indeno (1,2,3-c,d) pyrene		0.195	ND	ND	ND
Napthalene		ND	ND	.0706	ND
Phenanthrene		0.582	BMDL	2.35	BMDL
Pyrene		1.11	ND	1.28	0.118

Notes:

ND = Not detected.

BMDL = Below method detection limit.

Blank = Not analyzed.

Concentrations in ppm.

Volatile organic analyses performed by General Testing Corporation of Hackensack, NJ.

Acid extractable and Base/Neutral Extractable Organic Analysis performed by ETC of Edison, NJ.

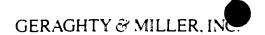


Table 3: Summary of Analytical Parameters

Soils	Sample Depth (ft)*	Parameters	Comments
All borings	0-2	TPHC B/N, Total Phenols	
All borings	2-4	VOCs	
S-2, S-8, MW-4, MW-5	0–2	Benzaldehyde, benzoic acid	In the vicinity of former benzoic acid/benzal-dehyde production area.
Ground Water			
All samples		TPHC, B/N, VOCs phenol, methanol	•
MW-4, MW-5		Benzaldehyde, benzoic acid	Adjacent to former benzoic acid/benzaldehyde production area.
MW-1		Formaldehyde	In the vicinity of former formaldehyde production area.

Note:

TPHC - Total Petroleum Hydrocarbons.

B/N - Base Neutral Extractable Organic Compounds.

VOCs - Volatile Organic Compounds.

^{*} Actual sample depth may be changed on the basis of reading from the field vapor detection instrument.

1095 Amboy Avenue, Edison, New Jersey 08837 (201) 225-2225

ENVIROTECH RESEARCH

Division of
Affiliated Engineering Laboratories, Inc.

QUALITY ASSURANCE MANUAL

February, 1986

FOR DEPUSE DALY

Natice Na. _

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APPLICATION FOR ECRA REVIEW INITIAL NOTICE

SITE TVALUATION SUBMISSION (SES)

This is the second part of a two-part application submittal and must be submitted within 30 days following public release of the decision to close operations or execution of an agreement of sale or option to purchase.

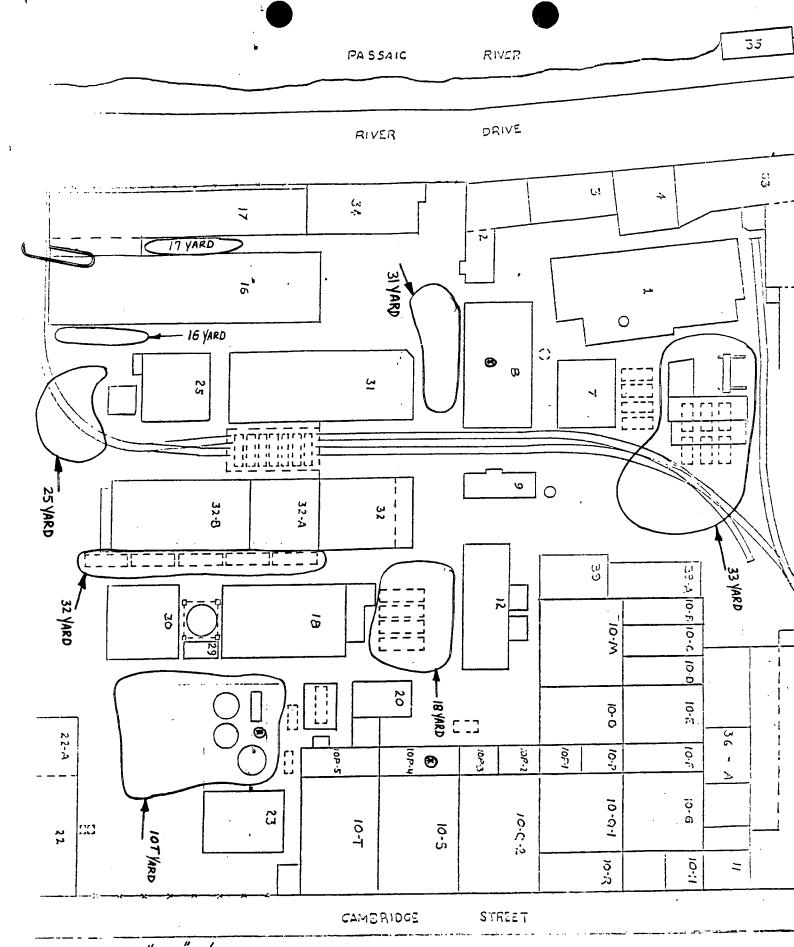
NAME OF INDUSTRIAL ESTABLISHMENT Kalama Chemical Inc.	
ADDRESS 290 River Drive	
CITY OR TOWN Garfield, New Jersey ZIP CODE 07026	
MUNICIPALITY Garfield, New Jersey COUNTY Bergen	
NAME OF PROPERTY OWNER Kalama Chemical Inc. FIRM: Same	
ADDRESS: Bank of California Center, Suite 1110	
TYOR TOWN: Seattle, Washington ZIP CODE: 98164	
MUNICIPALITY Seattle, Washington COUNTY King	
9. A scaled site map identifying all areas where hazardous substances or wastes have been or currently are generated, manufactured, refined, transported, treated, stored, handled or disposed, above or below ground is THIS MAP ENCLOSED? YES (See Appendix =) NO See Attached I tem #9 10. A detailed description of the most recent operations and processes at the industrial establishment organ in the form of a narrative report designed to guide the Department step-by-step through a plant evaluate with particular emphasis on areas of the process stream where hazardous substances and wastes are general manufactured, refined, transported, treated, stored, handled or disposed on site, above or below ground Also identify any floor drains with their points of discharge, septic systems if applicable, seepage pits a dry wells. Please note that establishments which ceased production prior to December 31, 1983, but as subject to ECRA because of on-going storage beyond that date, must provide details on past operations IS THIS REPORT ENCLOSED? YES (See Appendix =) NO See Attached I tem IF YOU HAVE CHECKED "NO", STATE THE REASON(S):	erzed ion, erated, i. id e

Α.	of storage vessels, su storage, containing h	azardous sub	ostances or '	wastes.		
					CRIBED IN A NARRATIVE REPO	ORT"
	YES (See Appen	tix =)	□ 1/0	See Attached		
	IF YOU HAVE CHECK	ED "NO", ST.	ATE THE RE			
В.	This may be accomp formance with Criter subsurface soil invest	lished in one rion 329 of t rigation (soil	of several v he National borings and	ways: a) Perform: Fire Protection A i analysis), or; c)	is wastes or substances must be ance of a satisfactory leak test association, or; b) Performance Excavate and remove the tank approved by the NJDEP.	in con-
	ARE THE RESULTS O			TEST OR THE SUB	SURFACE INVESTIGATION ENC	CLOSED?
	IF YOU HAVE CHECK	"NO", STATI	E THE REAS	ON(S): Outside	consultants have h	een
	requested to s	ubmit pr	oposals	to conduct a	appropriate test. B	ased
	on our review	of thei	r propos	sal, a consul	ltant will be retain	ed and
sub	results will completed. complete inventory of	be submi	ubstances a	the Departmend wastes, including effined, transported	ent after the tests ag description and locations of treated, stored, handled or to	ar e fall hazard disposed on
suc site	results will completed. complete inventory of stances or wastes gen above and below growing wastes that will remain the stances of the stanc	hazardous serated, manuound, and a cain on site.	ubstances a ufactured, redescription (Attach add	the Departmend wastes, including effined, transported of the location, ty itional sheets if ne	ent after the tests	are fall hazard disposed on us substant IE. Append luded.
suc site	results will completed. complete inventory of stances or wastes gen above and below growing wastes that will remain the stances of the stanc	hazardous serated, manuound, and a cain on site.	ubstances a ufactured, redescription (Attach add eleting to en	the Departmend wastes, including effined, transported of the location, ty itional sheets if ne	ent after the tests ng description and locations of it treated, stored, handled or opes and quantities of hazardo ecessary.) Review N.J.A.C. 7:	ar e if all hazard disposed on us substant IE. Appendituded. TO REMA ON SITE
suc site	completed. completed. complete inventory of estances or wastes gen e, above and below gre i wastes that will remaind N.J.A.C. 7:26-8 p	hazardous serated, manuound, and a cain on site. (nor to comp	ubstances a ufactured, redescription (Attach add eleting to en	the Departmend wastes, including affined, transported of the location, ty itional sheets if ne sure that all define	ent after the tests ag description and locations of treated, stored, handled or opes and quantities of hazardo ressary.) Review N.J.A.C. 7: ed hazardous materials are income.	ar e if all hazard disposed on us substant IE. Append diuded. TO REMA ON SITE
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suc site	results will completed. complete inventory of stances or wastes gen stances and below gro i wastes that will remaind N.J.A.C. 7:26-8 p	hazardous serated, manuound, and a cain on site. (nor to comp	ubstances a ufactured, redescription (Attach additing to en	the Departmend wastes, including effined, transported of the location, ty itional sheets if ne sure that all define LOCATION	ent after the tests ag description and locations of treated, stored, handled or opes and quantities of hazardo ressary.) Review N.J.A.C. 7: ed hazardous materials are income.	ar e f all hazardo disposed on us substance l El Append

		the standard of the standard o
	.	A detailed description, date and location on a scaled map of any known spill or discharge of hazardous substances or wastes that occurred during the historical operation of the site and a detailed description of any remedial actions undertaken to handle any spill or discharge of hazardous substances or wastes. (Attach additional sheets if necessary.)
		IS THIS INFORMATION ENCLOSED? YES (See Appendix =) = NO
		IF YOU HAVE CHECKED "NO", STATE THE REASON(S)::
		Trice have commented by the second of the se
		ARE THE SPILLS IDENTIFIED ABOVE INDICATED ON THE SCALED SITE MAP? TO NO
		IF YOU HAVE CHECKED "NO", STATE THE REASON(S):
		<u> </u>
:. B	3.	If this facility has an approved Spill Prevention Control and Countermeasure Plan (SPCC), enclose a copy with this submittal.
•	•	IS YOUR SPCC PLAN ENCLOSED? YES (See Appendix =) NO. this facility is not required to have in SPCC plan
د :	1 .	A detailed sampling or other environmental evaluation measurement plan which includes proposed soil, groundwater, surface water, surface water sediment, and air sampling determined appropriate for the site. (This sampling plan must be developed in conformance with ECRA Regulations N.J.A.C. 7.1-3.14 et seq., and Quality Assurance Guidelines as developed by DEP)
		ARE THREE COPIES OF THE SAMPLING PLAN ENCLOSED* YES (See Appendix = NO
		IF YOU HAVE CHECKED "NO". STATE THE REASON(S): We have requested outside
		consultants to submit proposals to conduct detailed soil and ground-
		water monitoring. Based on our review of their proposals, a contract
		will be awarded and copies of plan will be submitted to the Department.
: E		
	3.	If the sampling plan includes groundwater sampling and or the installation of monitoring weils, the applicant must complete a "Request for Hydrogeologic Assessment" form (blank form attached).
	3.	teah and also reclude groundwater sampling and or the installation of monitoring weils, the

Ello

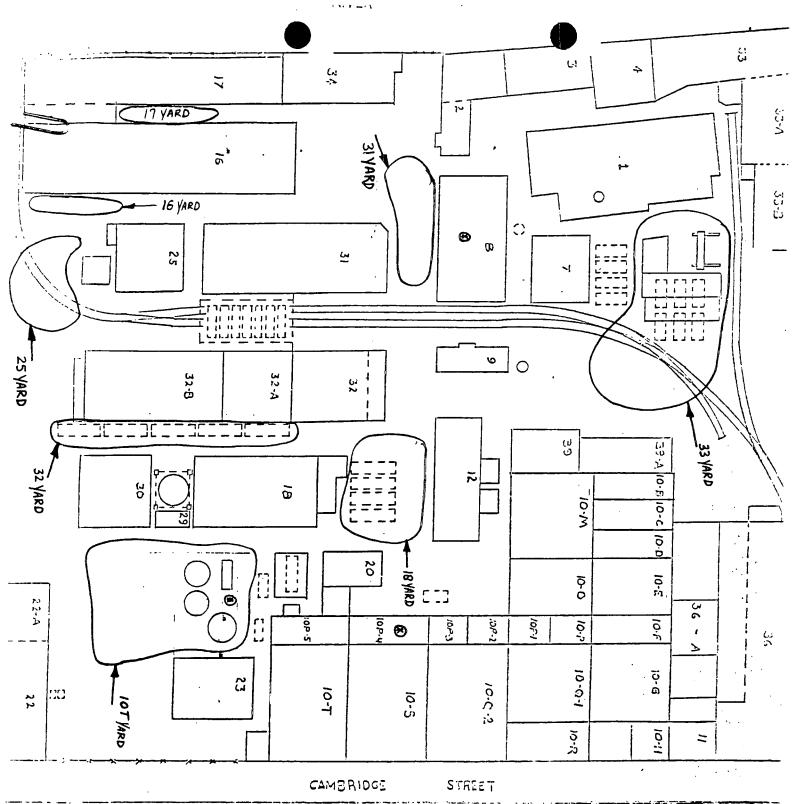
IF YOU HAVE CHECKED "NO". STATE THE REA	ASON(S): This form will be completed
	t after we have retained a consultant
to conduct detailed soil and g	roundwater monitoring.
and the second of the selection of the s	ed to decontaminate and/or decommission equipment and ire, refining, transportation, treatment, storage, handling, uding the name and location of the transporter, the ions involved.
IS THE DETAILED DESCRIPTION ENCLOSED?	YES (See Appendix =)
IF YOU HAVE CHECKED "NO", STATE THE REASON	(S):
N/A-Facility is not being close	ed.
owner or operator. Also include a detailed description odology, analyses, laboratory, quality assurance; que preparation of the sampling results.	e water sampling results, including effluent quality moni- lishment during the history of ownership, operation by the tion of the location, collection, chain of custody, meth- iality control procedures, and other factors involved in
ARE HISTORICAL RESULTS ENCLOSED? YES	
IF YOU HAVE CHECKED "NO". STATE THE REASONS	S): See attached report from
Geroghty & Miller, Inc.	
	·
17. List any other information you are submitting or w NONE	high has been formally requested by this agency:
These secondly was the information formance of the antifact false sweaming is a crime in this State. I am cognizal ECRA and that I may be personally liable for penalties to	igoudulon and any attachments is true. I am aware nt that providing false information is a violation under up to \$25,000 per day.
January 9, 1987	Aigurure
Date	Varl L. Opgrande
	Vice President Technical Services
	Title



SCALE 1" = 50.0'

* Indicates Spill Locations

GENERAL SITE PLAN 198



SCALE 1" = 50.0

1 Indicates Spill Locations

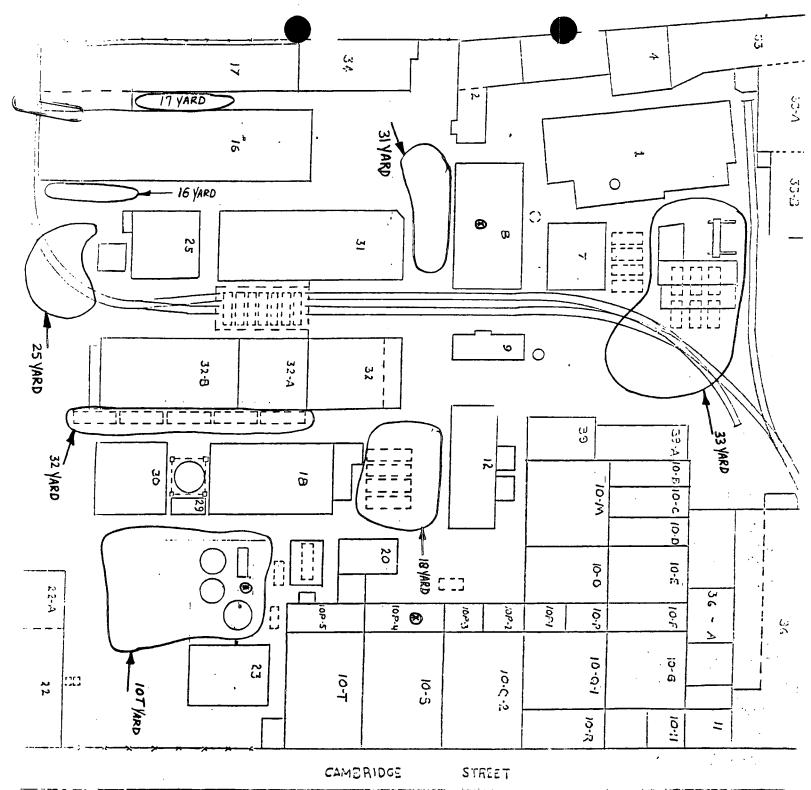
KALAMA CHEMICAL, INC SEATTLE, WASHINGTON

FORM ECRA-2 SUBMITTAL - ITEMS 9,10,11,12 & 13

GENERAL SITE PLAN

KALAMA CHEMICAL INC. GARFIELD, N.J.





SCALE 1" = 50.0

Indicates Spill Locations

KALAMA CHEMICAL, INC SEATTLE, WASHINGTON

FORM ECRA-2 SUBMITTAL - ITEMS 9,10,11,12 & 13

GENERAL SITE PLAN

KALAMA CHEMICAL INC. GARFIELD, N.J.

R 3

KALAMA CHEMICA INC SEATTLE, WASHINGTON ECRA-2 SUBMITTAL - ITEM #11 January 9, 1987 11. The following is a description of the type, age, installation date, construction material, capacity. contents, and location of storage vessels, surface impoundments, landfills, or other types of storage facilities, including drum storage, containing hazardous substances or hazardous mastes. Please refer to the site plan for actual locations on the plant site.

STORAGE LOCATION(S)	10-T Yard 10-T Yard 10-T Yard Bldgs 16, 17, & 32	33 Yard Bldgs 10T,22,22A,31;31,32,&33 Yards	Bldgs 10M, 16, & 32	25 Yard	Bldg 32	Bldgs 31 & 10E	The Tank CE	Vard I	10M &	7 007 77 10			Bldg 10M	18 Vard - Dragaronna		16 Yard	B1da 36			D 500		100 P. C.	B1da 32		
CAPACITY (GAL)	10,000 6,000 4,000	20,000 50#	100#	ຂ	6,000	550	16.000	15,500	55	10,000	10.000	10,000	55	15.000	55	ເດ	9,000	000.6	6,800	1,800	20	10,000	6,500	6,500	6,500
MATERIALS OF CONSTRUCTION	316 Stainless Steel 316 Stainless Steel 316 Stainless Steel Resin-lined Steel	316 Stainless Steel Bags-Palletized/Shrink Wrapped	Fibre (Paper Board)	Resin-lined Steel	Carbon Steel	316 Stainless Steel	Carbon Steel		316 Stainless Steel	Carbon Steel			Resin-lined Steel	Carbon Steel	Resin-lined Steel	Resin-lined Steel	Carbon Steel	Carbon Steel		Carbon Steel	Glass or Polypropylene	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
AGE (YRS)		5-10 New	N 0	3 9 2	70 70	0-5	50	50	0-1	20	20	20	0-1	35	0-1	0-1	35	35	35	35	0-2	35	35	35	35
STORAGE TYPE	Tank Tank Tank Drums	Tenk Cars Bags	Drums	Drums	Tank	Drums	Tank	Tank	Drums	Tank	Tank	Tank	Drums	Tank	Drums	Drums	Tank	Tank	Tank	Tank	Carboys	Tank	Tank	Tank	Tenk
HAZARDOUS SUBSTANCE OF WASTE	Benzaldehyde Benzaldehyde Benzaldehyde Benzaldehyde	Benzoic Acid, Tech Benzoic Acid, Tech	Benzoic Acid, USP	Echanol Formal Activity	Formaldehyde	Formaldehyde	Methanol	Mothanol	Methanol	Phenol	Phenol	Phenol	Propanol	Toluene	Toluene	Methyl Salicylate Btms					Sulfuric Acid	Caustic	Caustic	Caustic	50% Caustic Soda

4ICA INC SHINGTON 4ITTAL - ITEM #11 1987

llowing is a description of the type, age, installation date, ruction material, capacity, contents, and location of storage ls, surface impoundments, landfills, or other types of storage ities, including drum storage, containing hazardous substances zardous wastes. Please refer to the site plan for actual ions on the plant site.

or WASTE	STORAGE TYPE	AGE (YRS)	MATERIALS OF CONSTRUCTION	CAPACITY (GAL)	STORAGE LOCATION(S)
de	Tank	15	316 Stainless Steel	10,000	10-T Yard
de	Tank	15	316 Stainless Steel	6,000	10-T Yard
de	Tank	15	316 Stainless Steel	4,000	10-T Yard
de	Drums	New	Resin-lined Steel	55	Bldgs 16, 17, & 32
id, Tech	Tank Cars	5-10	316 Stainless Steel	20,000	33 Yard
id, Tech	Bags	New	Bags-Palletized/Shrink Wrapped	50#	Bldgs 10T,22,22A,31;31,32,&33 Yards
id, USP	Drums	New	Fibre (Paper Board)	100#	Bldgs 10M, 16, & 32
	Drums	New	Resin-lined Steel	55	25 Yard
de	Tank	20	Carbon Steel	6,000	Bldg 32
de	Tank	20	Carbon Steel	2,500	Bldg 31
de	Drums	0-5	316 Stainless Steel	55	Bldgs 31 & 10E
	Tank	50	Carbon Steel	16,000	32 Yard - Underground
	Tank	50	Carbon Steel	15,500	33 Yard - Underground
	Drums	0 - 1	316 Stainless Steel	55	Bldgs 10M & 32B, 17 Yard
	Tank	20	Carbon Steel	10,000	Bldg 10P-4
	Tank	20	Carbon Steel	10,000	Bldg 10P-4
	Tank	20	Carbon Steel	10,000	Bldg 10P-4
	Drums	0 - 1	Resin-lined Steel	55	Bldg 10M
	Tank	35	Carbon Steel	15,000	18 Yard - Underground
	Drums	0 – 1	Resin-lined Steel	55	Bldg 10M
icylate Btms	Drums	0 - 1	Resin-lined Steel	55	16 Yard
cid	Tank	35	Carbon Steel	9,000	Bldg 36
cid	Tank	35	Carbon Steel	9,000	Bldg 36
cid	Tank	35	Carbon Steel	6,800	Bldg 39
cid	Tank	35	Carbon Steel	1,800	Bldg 3
cid	Carboys	0-5	Glass or Polypropylene	20	Bldgs 32B & 10M
c Soda	Tank	35	Carbon Steel	10,000	Bldg 10P-4
c Soda	Tank	35	Carbon Steel	6,500	Bldg 32
c Soda	Tank	35	Carbon Steel	6,500	Bldg 32
c Soda	Tank	35	Carbon Steel	6,500	Bldg 32



KALAMA CHEMICAL, INC SEATTLE, WASHINGTON

January 9, 1987

FORM ECRA-2 SUBMITTAL - ITEM # 12

MATERIAL	HW/HS	QUANTITY	LOCATION(S) STORED / HANDLED	STORAGE METHOD	TO REMAIN ON SITE?
Benzaldehyde	нѕ	20,000 gal	10 T Yard, Bldgs 16,32,17,33,33A,33B,31	Tanks, Drums	Yes
Benzoic Acid	нѕ	200,000 lbs	Bldgs 10M,10T,16,22,22A,31,32 31 & 33 Yards	Tanks Cars, Fibre Drums, Bags	Yes
Ethanol	нѕ	4,000 lbs	25 Yard, and Bldg 32B	Drums	Yes
Formaldehyde	нѕ	6,000 gal	Bldgs 10E, 31, & 32	Tanks, Drums	Yes
Methanol	нѕ	16,000 gal	17 Yard, 32 Yard, & 33 Yard U/G Bldgs 10M and 32B	Tanks, Drums	Yes
Phenol	нѕ	30,000 gal	Bldg 10P-4	Tanks	Yes
Propanol	нѕ	4,000 gal	12M Yard and Bldg 10M	Drums	Yes
Toluene	HS	15,000 gal	18 Yard U/G and Bldg 10M	Tanks, Drums	Yes
Sulfuric Acid	нѕ	20,000 gal	Bldgs 3,36,10M,39,32B	Tanks, Drums	Yes
Sodium Hydroxide	нѕ	20,000 gal	Bldgs 32,32B,10P-4,36,10M,32B,39	Tanks, Drums	Yes
Methyl Salicylate Btms	HW	500 gal	16 Yard and Bldg 39	Drums	Yes

NOTES:

- 1. U/G indicates an underground storage tank.
- 2. HS indicates that the material is a Hazardous Substance under New Jersey la
- 3. HW indicates that the material is a Hazardous Waste under New Jersey law.

MICAL, INC

January 9, 1987

ASHINGTON

2 SUBMITTAL - ITEM # 12

				STORAGE METHOD	TO REMAIN ON SITE?
TERIAL	HW/HS	QUANTITY	LOCATION(S) STORED / HANDLED	SIORAGE MEIROD	
d e	HS	20,000 gal	10 T Yard, Bldgs 16,32,17,33,33A,33B,31	Tanks, Drums	Yes
id	нѕ	200,000 lbs	Bldgs 10M,10T,16,22,22A,31,32 31 & 33 Yards	Tanks Cars, Fibre Drums, Bags	Yes
	нѕ	4,000 lbs	25 Yard, and Bldg 32B	Drums	Yes
rde	нѕ	6,000 gal	Bldgs 10E, 31, & 32	Tanks, Drums	Yes
н	нѕ	16,000 gal	17 Yard, 32 Yard, & 33 Yard U/G Bldgs 10M and 32B	Tanks, Drums	Yes
	нѕ	30,000 gal	Bldg 10P-4	Tanks	Yes
	нѕ	4,000 gal	12M Yard and Bldg 10M	Drums	Yes
	нѕ	15,000 gal	18 Yard U/G and Bldg 10M	Tanks, Drums	Zęg
Acid	нѕ	20,000 gal	Bldgs 3,36,10M,39,32B	Tanks, Drums	Yes
iroxide	нѕ	20,000 gal	Bldgs 32,32B,10P-4,36,10M,32B,39	Tanks, Drums	Yes
licylate Btms	нм	500 gal	16 Yard and Bldg 39	Drums	Yes
i					

And the second second

dicates an underground storage tank.

icates that the material is a Hazardous Substance under New Jersey la

icates that the material is a Hazardous Waste under New Jersey law.

SPILL CONTROL AND COUNTERMEASURE PLAN

April 1, 1981

Reviewed May 1, 1984

In any major chemical company, the potential for spills of chemicals or oil is always present. Spills of whatever nature can cause fire, health hazards or pollution of river and tributaries. It is therefore imperative that all members of supervision be alert for spill potentials, be aware of methods to control spills and for procedures to be followed to insure proper notification of authorities in the event of a spill. Toward this end, the following spill control and countermeasure plan is issued.

1. Spill Potential Control

- A. All above and below ground storage tanks and lines are compatible with the material and the conditions of storage.
- B. There is periodic inspection of all storage tanks, foundations and supports for signs of deterioration.
- C. Truck drivers are required to remain at their trucks during all loading and unloading operations.
- D. Storage tanks are measured, both manually and/or mechanically, prior to pumping.
- E. The property is completely enclosed with an eight foot high security fence and all gates are locked except for operational hours to prevent unauthorized entrance and possible vandalism.
- F. The property has adequate night lighting to permit the detection of possible leaks, unauthorized personnel or vandalism.
- G. A shift foreman is present at all times, who would be notified immediately by any employee discovering a spill or major leak of oil or chemicals. This plan contains procedures to be followed when a spill is discovered.

Scope

This plan will apply to any spillage of oil or hazardous chemicals. Specifically covered are the substances designated as hazardous by the regulations of the federal spill program (8/29/79) and by the New Jersey hazardous substance list. Oily or hazardous materials stored in the plant are listed following with location and capacity of tanks.



Material	Location Bldg. No.	Tank Capacities, Gal
No. 2 Fuel Oil	10T - U/G	1 x 10,000
No. 6 Fuel Oil	1 - U/G	4 x 15,000
Sodium Hydroxide, 50%	32, 10-P-4	3 x 6,500, 1 x 10,00
Sulfuric Acid	36, 3, 39	2 x 9,000, 1 x 1,800 1 x 6,800
Methanol	33 - Ľ/G	1 x 15,000
Methanol	32 - U/G	1 x 16,500
Propanol	10M	Drums only
Ethanol	32 B	Drums only
Pinenol Pinenol	10-P-4	3 x 10,000
Benzaldenyde	10T - Yard	1 x 10,000, 1 x 6,00 2 x 4,000
Benzyl Alcohol	31	2 x 7,000
Formaldehyde	32, 31	1 x 6,000, 1 x 2,500

2. Spill Containment

- A. Concrete dikes are provided around storage tanks above ground in the Benzoic Acid area.
- B. A clearly labeled supply of sand bags and absorbent compound is maintained on pallets for exclusive use for containment of oil spills. It is located in Building 22.
- C. A portable pump with suction and discharge hose is available to pump out diked areas or containment areas to sais storage.
- D. The No. 6 fuel oil unloading area and underground tank fill and vent spouts are surrounded by crushed stone. This is designed to absorb the heavy oil from a spill, after which it can be removed with a backnoe and replaced.
- E. The Fire Brigade is trained in spill control and cleanup methods. In the event of a spill or major leak of oil material, the following procedure will be observed.



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14.

HASIE DISPOSAL SITE DIRECTORY

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FRANKLINVILLE FRANKLIN TOWNSHIP LANGFILL. PENNSTLVANIA AVE 08322

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Memo To: Leane Shotnell.

From: William C. Hoggard.

Subject: Tenneco Chemials where. Hayden Chemical d'inissime Purpose: Plant Evaluation

Purpose: Plant Evaluation

Persone deternienal: Tom Lo Bue Jechnical Legal.

Quegust Lege, J'roduction Sugal.

Lu. P. Andlewon, Enclose Environmental Service.

Dates of American 5/24,5/25/22

Nature of Business: manufacture of USP Crade Organic Chimile

Fourteen major products are manufactured in

the plant. Fourteen different processes are enjoyed
in the production of these fourteen mayor products

The products manufactured are listed in following

(11 Benzotek (Benzoir acid 200,000 B/ok location Birching 10-7

(2) DDSH (Dodecal succinconly divide) Building 32-B

3) Formaldelyte 9 million 16/yr foration Building 32

4) Fumaric acid 5 million 16/yran MAXILIAN MHOUGATION, Cap. 3-14, 33

5) Methyl Salinglate 30,000 16/ok Blds 3

6) Methyleredisalinglic acid 7500 16/ok Blds 3

7.) Paraformoldelyde 40-50 llowsond 16 wk Bldg-12

S.) Parahydroxy benzoie acid 20 thousand but Bldg theo 10-17

9) Parasept, Time + Technical 18 thousand Lik Bids 32

'il D'atassium Guaicalsulfonate 15000 15/wK Blog 36

(11) Dodium Demonate 250 Chousand 156k Blds 10-T

(12.) Saliglie acid (Sellino) 4:0000 16/month ? 3ldg - 3 (0

(14) SodA + PutAsh Salicylote

Preciona

Jaces 2 I

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Inverse II

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nocessIII

Manufacture of Formaldelyde

With materials used - method + catalest

to emissions, no central equipment - an prollation production dome well vapor was smitted interm jet on the vaccuum regation

Process III

Francie cecid manufacture

now materials used - maleic conductive

Closed elections no munts, no initialis ma problem - protected - c

ProcessII
manufacture of methyl palicylate

Rour-material weil - method saterification of

impression - none

Inverse VI In amfortune of methyleredischiefe i acid. formaldeligde, H2504, Sulviglei acid no smission, no central equipment, aijzoilleten polential-C

Process III

Manufacture of Paraformaldelike
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a wet sculle is employed in process to knock out processional chiefe. Hacks and porticulate. as new identical scrubber was being installed, no premite no contiguete, needed.

Emission - none and pellution potential with somble openiting properly - mil

Process VIII Monufacture of Parahydroxy sengace acced How meterile used - Court i polast, Vinenal, Ca Control agreegement - none two wents from month willinging hours comission mil

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Trocess X Potassim
Manufacture of 1 Guaical sulfonate from materials - General Emission 250/6 CC2/day Air pollution potential . C.

was functioning effectionly. no smissions

Vruces X Manifortine of Sadier kenyonate

Row moterials used - blogoi and, Solim Contonate Di

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Fivees XI

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O.COUH + NaCH -> COONA + HZO

(T-1041 was approved 11/67 Expiration date 2/68
Take process was not operating at the time of inspection 15

pleane the Econolise was heavy elected Sadein tillight what had accomplated in the sahard went was being knowled out.

Process XIV

Manufactur of Soda - Pérach Sakinglate
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Conducions

- A no odor smission obscured of the governor of home or
- B) All Source donnigement and processes are contilled by.
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- (2) The Benjoi acid monifording and may be a future some of mis pollution due to human encourant which ought lead to spills in the Tolues homes of areas areas

Recommendations

D'find out whether a Certificate was issued for control equipment thesel in the Parasepts menufacture see Proces IX, And cover conser Chapter Nine) B Close Chapter II file

ECRA SOIL AND GROUND-WATER INVESTIGATION AT THE KALAMA CHEMICAL, INC. FACILITY, GARFIELD, NEW JERSEY

June 1988

Geraghty & Miller, Inc. 7 Atlantic Street Hackensack, New Jersey 07601

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SOIL QUALITY
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4. Analytical Parameters for Ground-Water Samples. 5. Summary of Water-Level Data.
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9. Constituent Concentrations in Floating Product Sample Collected from Monitoring Well MW-7.
10. Concentrations of Inorganic Constituents in Sample from Monitoring Well MW-3.
11. Summary of Product Removal Data - Monitoring Well MW-7.

FIGURES

- 1. Monitoring Well and Soil Boring Location Map.
- Water-Level Contour Map, March 11, 1988.

APPENDICES

- A. Tank Removal Location Sketches.
- B. Monitoring Well Construction Diagrams.
- C. Geologic Logs for Monitoring Wells and Soil Borings.
- D. Laboratory Reports for Tank Removal Soil Samples (separate volume).
- E. Laboratory Reports for Soil Samples (separate volume).
- F. Laboratory Reports for Ground-Water Samples (separate volume).

ECRA SOIL AND GROUND-WATER INVESTIGATION AT THE KALAMA CHEMICAL, INC. FACILITY, GARFIELD, NEW JERSEY

INTRODUCTION

In March 1987, Geraghty & Miller, Inc. was retained by Kalama Chemical, Inc. to design and conduct an investigation of soil and ground-water quality conditions at the Kalama facility in Garfield, New Jersey in compliance with New Jersey's Environmental Cleanup Responsibility Act (ECRA) under N.J.A.C. 7:1-3 and 4. A workplan was prepared based on information provided by Kalama personnel and data collected during a preliminary soil boring program conducted by Geraghty & Miller, Inc. in 1985. The results of this preliminary program were included in the workplan, which was submitted to the New Jersey Department of Environmental Protection (NJDEP) for review on August 13, 1987. Since the NUDEP indicated that it would not review the workplan for at least six months, Kalama Chemical, Inc. decided to implement the workplan prior to the assignment of an ECRA case manager. The field work was carried out from September 1987 to March 1988. This report summarizes the results of the implementation of the investigation workplan.

FIELD PROGRAM

The ECRA site investigation was carried out by implementing several tasks, including:

- O The removal of 11 of the 27 underground storage tanks, and the collection of soil samples in the tank excavations. Additional tanks are scheduled to be removed in the near future.
- The installation and sampling of seven shallow and two deeper monitoring wells.
- The collection of soil samples at 13 locations for chemical analysis.
- The measurement of three synoptic rounds of ground-water levels in the nine monitoring wells.

Underground Storage Tank Removal Program

There were a total of 27 underground storage tanks at the Kalama facility, with capacities ranging from 500 to 16,000 gallons. All the tanks were made of steel of varying thicknesses and were used to store a variety of products. Kalama was using only seven tanks at the time of the initiation of this program. The remaining tanks were either empty or filled with water. The tank removal program began in late September 1987; to date, 11 tanks have been removed from the ground. Additional tanks are scheduled to be removed in 1988.

The cleaning of the tanks, the excavation prior to removal, and the cutting and disposal of the tanks were carried out by a contractor under the supervision of Kalama personnel. A Geraghty & Miller, Inc. representative was on site during the tank removal program to document

tank conditions, photograph the tanks and excavations, and collect soil samples from the excavated pits for chemical analysis. Table 1 summarizes pertinent information regarding tank dimensions, products stored, and the number and depth of collected soil samples.

The number of soil samples collected from each tank excavation was based on the size of the tank and the relative location/orientation of the tank with respect to other tanks in a tank farm. The locations and depths of the collected soil samples are shown in the location sketches provided in Appendix A.

The soil samples were collected from the excavation with either a hand-held auger, a backhoe bucket, or a combination of both. The backhoe bucket was cleaned between individual tank locations. The hand-held bucket auger and other sampling gear were decontaminated prior to and in between sampling events by washing with a laboratory grade detergent and rinsing with potable water, followed by a rinse with distilled water.

Monitoring Well Installation

Nine monitoring wells were drilled at seven locations from December 2 to December 17, 1987 by a licensed driller in the employ of Environmental Drilling, Inc. of Mount Arlington, New Jersey. Geologic samples were described and monitoring well construction details were documented by an attending Geraghty & Miller, Inc. scientist. The wells were drilled by the hollow-stem auger method, using 6-1/4 inch inside diameter hollow-stem augers. The wells were constructed of four-inch diameter, 0.020-inch slot, PVC screen and four-inch diameter PVC casing. Well construction details are summarized in Table 2; individual monitoring well construction diagrams are presented in Appendix B. Monitoring well locations are shown on Figure 1.

Continuous geologic samples were collected at each monitoring well location from ground surface to the water table. Formation

samples were collected at approximately five-foot intervals below the water table. Geologic logs for monitoring wells are included in Appendix C. The shallow monitoring wells were constructed with ten or fifteen feet of well screen, set with a few feet of the screen above the water table.

The monitoring wells were developed on December 21, 1987 by Environmental Drilling, Inc. under the supervision of a Geraghty & Miller, Inc. representative. The wells were developed by working a surge block up and down in the well and by pumping with a centrifugal or submersible pump. Monitoring wells MW-2, MW-3, and MW-4, completed in clay and/or silt, went dry several times during development. The tops of the monitoring well casings were surveyed relative to mean sea level by a New Jersey-licensed surveyor.

Soil Borings

Soil samples were collected from three monitoring well and ten soil boring locations between December 10 and 18, 1987. Of the ten soil borings, eight were collected with a drilling rig using 3-3/4 inch internal diameter hollow-stem augers; the remaining samples were collected with a bucket-type hand auger. The soil samples collected from the borings for two monitoring wells, MW-1 and MW-7, were designated as S-3 and S-1, respectively. The soil sample from monitoring well MW-5 was designated as MW-5.

No soil sample was taken from the boring of monitoring well MW-4, (as originally specified in the workplan) as the top of the water table was encountered immediately below the concrete surface at a depth of approximately 1.5 feet below ground surface. The material above the water table was primarily concrete and gravel and no soil was available for sampling. Geologic logs for soil borings are included in Appendix C.

The state of the s

Soil samples were collected in accordance with the protocol presented in Appendix C of the workplan (Geraghty & Miller, Inc., 1987). Analytical parameters, sample depths, and other pertinent information for each soil sample are summarized in Table 3.

A field blank was collected for the analysis of volatile organic compounds. All samples were submitted to Envirotech Research of Edison, New Jersey for chemical analysis.

Collection of Ground-Water Samples

The monitoring wells were sampled on January 5 and 6, 1988 for the parameters listed in Table 4. The water-level in each well was measured prior to well evacuation and sampling. The monitoring wells were evacuated in accordance with protocols presented in Appendix D of the sampling plan (Geraghty & Miller, Inc., 1987). Pumping rates in low yielding wells were kept to a minimum to prevent the wells from going dry rapidly. Wherever possible, three to five times the volume of standing water in each well was evacuated prior to sampling. Wells that went dry repeatedly (even at low pumping rates) were allowed to recover prior to sampling.

A replicate sample was collected from monitoring well MW-1 for the parameters listed in Table 4 and was labelled MW-8. A field blank sample was collected using blank water supplied by Envirotech Research of Edison, New Jersey to document the thoroughness of equipment decontamination procedures. Travel blanks were also enclosed for analysis. All samples were submitted for chemical analysis to Envirotech Research. Field parameters (pH, specific conductance, and temperature) were measured with portable field instruments.

Water-Level Measurements

Ground-water levels in the nine monitoring wells were measured during three synoptic events; these water-level data are summarized in Table 5.

HYDROGEOLOGIC CONDITIONS

<u>Geology</u>

The Kalama facility was built over a sequence of unconsolidated deposits consisting of fine to coarse sand, silt, and clay. Large portions of the site are paved with asphalt; imported fill consisting of mixtures of sand, gravel, crushed stone, and brick fragments were encountered underneath the asphalt in places. The thickness of the unconsolidated deposits under the site ranges from 32 to 40 feet.

Underlying the unconsolidated deposits is a bedrock formation consisting of red and brown sandstones and shales. This bedrock formation is referred to as the Brunswick Formation of Triassic age. The top of the bedrock is weathered, consisting of rock fragments in a mixture of clay, silt, and sand.

Ground-Water Flow Conditions

The water-level data collected on March 11, 1988 were used to prepare the water-level contour map shown on Figure 2. The horizontal component of ground-water flow in the uppermost saturated unit is generally from northeast to southwest, discharging to the Passaic River. Relatively elevated water levels have consistently been observed in monitoring well MW-4. Elevated water levels in this area have apparently created a "mound" in the water table under the southeastern portion of the facility; ground water flows radially in all directions from this mound until being deflected to flow with the prevailing northeast to southwest flow regime.

The two monitoring well clusters (MW-3/3D and MW-6/6D) indicate that there is a downward component to ground-water flow under portions of the facility. The downward component is slight at the MW-6/6D

cluster, and is more pronounced at the MW-3/3D cluster. The difference in the magnitude of the vertical component to ground-water flow at these two clusters may be due to the presence of a low permeability clay layer at the location of MW-3/3D. The shallow monitoring well (MW-3) is screened above this clay layer, while the deeper well (MW-3D) is screened in a sand and silt unit below the clay layer (see Figure B-3 in Appendix B).

SOIL QUALITY

Underground Storage Tank Program

Analytical data for soil samples collected during the tank excavation program are presented in Table 6. Soil samples collected around tanks that held fuel oil or gasoline were analyzed for total petroleum hydrocarbons (TPHC), while samples collected around tanks that held toluene or methanol were analyzed for those specific target compounds. For each tank excavation, soil sample locations are shown on the location sketches included in Appendix A. The data summarized in Table 6 indicate that soil-quality conditions around all the tanks, with the exception of Tank A-25 and possibly Tanks C-3 and A-27, have been impacted to some degree by the products stored in the tanks.

Exploratory Soil Boring Program

The analytical results for soil samples collected during the soil boring program are summarized in Table 7; the complete laboratory reports are presented in Appendix E. Soil boring locations are shown on Figure 1; the dates and depths of sample collection are summarized in Table 3.

Toluene was the volatile organic compound (VOC) detected in highest concentrations, and was found at relatively high levels in soil samples collected from the southeastern portion of the facility (soil samples S-1, S-2, S-7, and S-8). Benzene was also detected in high concentrations in soil samples S-7 and S-8.

Several base/neutral extractable organic (B/N) compounds were detected in soil samples collected from the southern half of the facility. Of the detected compounds, a number of them were below the method detection limit. Detectable levels of TPHC were found in soil samples S-1, S-2, S-3, S-7, S-8, and S-12. Total phenols were detected in samples S-1 and S-2 at concentrations of 8.7 and 200 mg/kg, respectively.

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GROUND-WATER QUALITY

Concentrations of organic constituents in ground-water samples are summarized in Table 8. Benzene and toluene and were the principal VOCs detected in monitoring well samples. In addition, monitoring well MW-5 showed the presence of trichloroethene. Other VOCs detected at lower concentrations (below or approximately near the detection limits) include chlorobenzene, trans-1,2-dichloroethene, ethylbenzene, tetrachloroethene, and total xylenes. Monitoring wells MW-2, MW-6, and MW-6D had total VOC concentrations of less than 10 ug/L, while MW-3D had one VOC (ethylbenzene) at a concentration of 23 ug/L.

A sample of the product layer floating on the water table was collected from monitoring well MW-7; no ground-water sample was collected from this well, since the possibility of introducing droplets of the floating product layer into the water sample could not be precluded. The results of the analysis of the product sample is summarized in Table 9. Toluene was detected in the product phase of this product sample at a concentration of 541,000 mg/kg, indicating that apparently 54 percent of the mass of this product phase consists of toluene. The TPHC concentration was reported as 408,900 mg/L, equivalent to approximately 41 percent (by mass).

Several B/N compounds were detected in relatively low concentrations (slightly above to below the detection limits) in all monitoring well samples. Benzaldehyde was detected in the sample collected from monitoring well MW-5 at a concentration of 570 ug/L. The sample of the floating product phase collected from MW-7 indicated the presence of several B/N compounds.

Due to a high measured field conductivity, a sample collected from monitoring well MW-3 was analyzed for selected inorganic parameters. The results of this inorganic analysis, summarized in Table 10, indicate that sulfate, sodium, and iron account for the majority of the dissolved solids in this ground-water sample.

Total phenols were detected in samples from monitoring wells MW-3, MW-3D, and MW-4 at concentrations of 2570, 122 and 4.65 mg/L, respectively. All other monitoring wells showed phenol concentrations below 1 mg/L. No formaldehyde was detected in the sample from monitoring well MW-1; no other samples were analyzed for this parameter. Methanol was analyzed in the samples from monitoring wells MW-1, MW-2, and MW-3 and was detected at concentrations of 5.9, less than 2.0, and 120 mg/L, respectively. Complete laboratory reports for ground-water samples are presented in Appendix F.

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DATA GAPS

At present, there are several uncertainties regarding ground-water flow conditions and the extent of ground-water quality problems underlying the Kalama facility. These data gaps include the following:

- currently, none of the installed monitoring wells serve as a true upgradient well for the facility. Monitoring well MW-3 is not upgradient of the entire facility and monitoring well MW-5 appears to be downgradient of the mound in the water table that apparently exists in the vicinity of monitoring well MW-4.
- The cause of the apparent mounding of the water table in the vicinity of MW-4 cannot be determined at present. Possible factors creating elevated water levels in this area could include a source of artificial recharge (e.g. leaking water lines) located on-site, or possibly a leaking water main or some other source of artificial recharge on Hudson Street, to the south of the facility.
- o The horizontal extent of the floating product layer detected in monitoring well MW-7 has not been defined. The extent of elevated concentrations of toluene in ground water detected in the northeastern portion of the facility (monitoring well MW-3) and the southeastern portion of the facility (monitoring wells MW-5 and MW-4) is not currently known.

ADDITIONAL INVESTIGATIVE PROGRAM

The information compiled through the implementation of the sampling plan has been used to develop a preliminary understanding of ground-water flow and quality conditions underlying the site, and has also led to the identification of certain ground-water quality problems. Additional data will be needed to fully delineate the extent of these problems, to determine the cause of the elevated water levels detected in the southeast portion of the plant, and to establish ground-water quality conditions upgradient of the facility. The following program is proposed to address the water-quality problems and other issues identified in the section entitled "Data Gaps".

Resampling of Selected Wells

The initial round of ground-water sampling has indicated potential ground-water quality problems in portions of the facility. Prior to developing a detailed program for additional monitoring wells to refine the delineation of the extent of these problems, or a program designed to assess the feasibility of ground-water remediation, a second round of ground-water samples will be collected from selected monitoring wells and analyzed for VOCs. The wells to be resampled will be those that have shown elevated VOC concentrations: MW-1, MW-3, MW-4, and MW-5. Based on the analytical results, the need to conduct additional investigative work will be assessed.

Floating Product Recovery

A program has been initiated to remove the floating product from monitoring well MW-7. This monitoring well (MW-7) is being used as a

recovery well on a regular basis. Prior to product recovery, the thickness of the floating layer is measured. The product is being removed with a centrifugal pump, and the amount of product removed is being measured and recorded. The thickness of the product layer after bailing is also being measured and noted. The data collected in the first three episodes are summarized in Table 11.

The use of monitoring well MW-7 as a recovery well will continue for several weeks. Based on the amount of product removed and the observed persistence of this product layer, the effectiveness of using this well for recovery will be evaluated and the need for additional monitoring wells or recovery points will be assessed. The results from the three recovery episodes indicate a significant decrease in measured product thickness in monitoring well MW-7.

Additional Monitoring Wells

The results of the second round of ground-water sampling will be utilized to evaluate the need for additional monitoring wells to better delineate the extent of tentatively identified problems and data gaps. At present, it appears that none of the existing monitoring wells serves as an upgradient well, as monitoring well MW-3 has shown potential ground-water quality impacts from plant activities. It appears that an upgradient well can only be located off Kalama property; the installation of this well will be contingent on obtaining permission from the City of Garfield to install the well on a public sidewalk.

As stated earlier, a mound of elevated ground-water levels has been identified in the southeast portion of the facility, near monitoring well MW-4. Kalama is currently investigating the possibility of a leak in an underground water pipe or a break in the Passaic Valley water header that is located on Hudson Street, along

HOLES

the south side of the property. Based on these investigations, and the results of the second round of sampling, the need for additional monitoring wells will be addressed.

Respectfully Submitted,

GERACHTY & MILLER, INC.

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Table 1. Summary of Tank Removal Activities at Kalama Chemical Facility, Garfield, New Jersey.

Tank #	Product Stored	Date Removed	Length/ Diameter (ft/ft)		Tank Volume (gallons)		Number of Soil Samples Collecte	Analytical Parameter	Depth to Water (ft bgs)	Depth	Organic Vapor conc.(ppm	Laboratory)*	Visual Observations
A-25	#2 Fuel Oil	9/22/87	16/10	10	9400	Steel	4	TPHC	9.0	7.5-8.5	0. 2-1. 7	 Envirotech	
(-}	#2 Fuel Oil	10/1/87	24/6	7.5	5000	Steel	6	TPHC	HE	7.0-7.5	25-92	Enviratech	Share adversariate to
A - 26	Gasoline	10/2/87	6/4	4.0	560	Steel	4	TPHC	NE	3. 75-4. 25		Envirotech	Strong odors emitted from excavated soil and samples; appears to be chemical odor.
A-27	Kethanol	10/5/87	6/4	4.0	560	Steel	4	Hethanol	HE	4. 0-4. 5	0.3-0.7	Enviratech	Strong chemical odors from excavated soil and samples.
A-4	#2 Fuel Oil	10/7/87	21.5/8	10	8000	Steel	5	TPHC	10.0	9.5-11.0		Enviratech	0.4
A-9	Toluene	10/13/87	28/10	10	16,500	Steel	4	Toluene	12.0	8.5-12.0			A chemical sever was broken just prior to the completion of sampling.
A-10	Toluene	10/20/87	28/10	10	16,500	Steel	3	Toluene)12.0	10.0-12.0			Plant sprinkler line was broken by the backhoe. The hole was pumped dry prior to sampling.
A-11	Taluene	10/22/87	28/10	10	16,500	Steel	3	Taluene		12.0-14.0			Samples had strong odor.
7-12	Toluene	10/26/87	28/10	10	16,500	Steel	4		11.0	10.5-13.5			Samples had strong odor.
:-2	#2 Fuel Oil	11/18/87	24/6	8	5000	Steel	5	TPHC	10.0				Excavated soil and samples had strong odor. Floating solvent, soil was saturated with orange color solvent.
-1	42 Fuel Oil	11/23/87	28/10	10 1		Steel	5	TPHC	10.0	3. 0-12. 0 8. 0-10. 0			Strong odor, sily, appears to be a mixture of fuel oil and chemicals. Strong odor, sily, appears to be a mixture of fuel oil and chemicals.

Depth of collection of individual samples presented in location sketches in Appendix A.

* A HNU(TM) Organic Vapor Monitor with Photoionization Detector was used for monitoring vapor concentration for tank C-2, other tank excavations were monitored with a TIP (TM) photoionization meter. Vapor concentrations are expressed in parts per million (ppm), equivalent to ppm of beazene. ppm - Parts per million.

ME - Not encountered.

NO - Not obtained.

bgs - below ground surface.

TPHC - Total Petroleum Hydrocarbons.

General Testing Corporation and Envirotech Research are located in Hackensack, NJ and Edison, NJ, respectively.

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Table 2. Monitoring Well Construction Details.

Weil Number	Date Installed	Total Depth (ft-bgs)	Well Diameter	Screen (ft-ogs)	Elev. of MP(*) (ft-msi)	Elev. of MP(**) (ft-msl)	Type of Protective Casing
MW-1	12/11/87	21.0	4-inch	6.0-21.0	18.12	19. 51	Stick-up
MW-2	12/17/87	15.5	4-inch	5.5-15.5	16.70	16.95	Flush
MW-3	12/9/87	15.0	4-inch	5.0-15.0	20.54	21.79	Stick-up
MW-3D	12/8/87	40.0	4-inch	35.0-40.0	21.25	21.50	Stick-up
MW-4	12/15/87	15.0	4-inch	1.0-15.0	18.56	19.35	Stick-up
MU-5	12/10/87	19.0	4-inch	4.0-19.0	19.51	20.47	Stick-up
MW-6	12/4/87	20.5	4-inch	5.5-20.5	18.05	19.63	Stick-up
MW-6D	12/3/87	31.5	4-inch	25.5-31.5	18.90	19.19	Stick-up
MW-7	12/14/87	21.0	4-inch	6.0-21.0	18.66	20.08	Stick-up

Elev. - Elevation.

MP - Measuring Point.

ft-bgs - feet below land surface.

ft-msl - feet above mean sea level.

(*) - Top of PUC casing.

(**) - Top of steel (protective) casing.

The monitoring wells were installed by Environmental Drilling, Inc. of Mount Arlington, New Jersey.

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Table 3. Analytical Parameters for Sovi Samples.

		Date i Shipped	DTW (ft- bgs)	Depth Range (ft-bgs)	-	Analytical Parameters
5-1#	12/14/8	7 12/15/87	11.0	7.0-9.0	10	B/N+15 , TPHC. Total Phenol
				9.0-11.0	50	UDCs+15
S-2	12/13/8	7 12/18/87	4.0	2.0-4.0	600	B/N+15 , TPHC, Total Phenol, Benzoic Acid, and Benzaldehyde
S-3#	12/10/8	7 12/10/87	11.0	2.5-4.5	0	B/N+15 , TPHC, Total Phenol
				8.5-10.5	2	V0Cs+15
S-4 * *	12/19/8	7 12/18/87	?	1.0-1.5	0	B/N+15 , TPHC, Total Phenol
				3.0-3.5	0	VOCs+15
S-5	12/17/8	7 12/18/87	8.5	0.5-2.5	0	B/N+15 , TPHC, Total Phenol
				2.5-4.5	0	VOCs+15
S-6	12/17/87	12/18/87	8.5	1.0-3.0	0	B/N+15 , TPHC, Total Phenol
				3.0-5.0	0	VOCs+15
S-7	12/13/87	12/19/87	4.0	2.0-4.0	650	UOCs+15, B/N+15, TPHC, Total Phenol
S-8	12/18/87	12/18/87	8.5	2.5-4.5	20	DAMAS TOUC T.A. DE
			2.0	6.5-9.5	500	B/N+15 , TPHC, Total Phenol, Benzoic Acid, and Benzaldehyde VOCs+15
S-9 * *	12/18/87	12/18/87	2		0	
				3.0-3.5	0	B/N+15 , TPHC, Total Phenol UOCs+15
S-10	12/18/87	12/18/87	4.0	2.5-4.5	•	VOCs+15, B/N+15 , TPHC, Total Phenol
• • •						To a second seco
S-11	12/17/87	12/18/87	8.0	1.0-3.0	0	B/N+15 , TPHC, Total Phenol
				5.0-7.0		VDCs+15
S-12	12/18/87	12/18/87	4.0	1.5-3.5		UOCs+15, B/N+15, TPHC, Total Phenol
MW-5	12/9/87	12/10/87	7.0	2.0-4.0	2	Benzoic Acid and Benzaldehyde

DTW - Depth to water below land surface.

* - HNU organic vapor monitor with photoionization detector.

^{** -} Sample collected with hand auger.

[#] - S-1 collected from MW-7 and S-3 collected from MW-1.

ft-bgs - feet below land surface.

B/N - Base/Neutral Extractable Organic Compounds.

vOCs - Volatile Organic Compounds.

TPHC - Total Petroleum Hydrocarbons.

Table 4. Analytical Parameters for Ground-Water Samples.

Well Number	Date Sampled		Analytical Parametrs d	Color	Odor	рН
MW-1 MW-2 MW-3 MW-3 MW-5 MW-6 MW-6 MW-7 MW-8 MW-7 MW-8 Blank Trip	1-5-88 1-5-88 1-5-88 1-6-88 1-6-88 1-5-98 1-6-88 1-5-88 1-5-88	21.0 35.5 None 13.0 None	UGCs+15, B/N+15, TPHC, Total Phenol, Methanol, Formaldehyde UGCs+15, B/N+15, TPHC, Total Phenol, Methanol UGCs+15, B/N+15, TPHC, Total Phenol, Methanol, Inorganic Constituents UGCs+15, B/N+15, TPHC, Total Phenol UGCs+15, B/N+15, TPHC, Total Phenol, Benzolc acid, Benzaldehyde UGCs+15, B/N+15, TPHC, Total Phenol UGCs+15, B/N+15, TPHC, Total Phenol UGCs+15, B/N+15, TPHC, Total Phenol UGCs+15, B/N+15, TPHC UGCs+15, B/N+15, TPHC UGCs+15, B/N+15, TPHC UGCs+15	None Yellow Red-brown Brown Gray-brown Pale-Brown None None Product- St	None None None	6.8 6.4 5.9 7.6 5.7 7.5 6.7 7.2

UOCs+15 - Volatile organic compounds by USEPA Method 624 with library search for 15 additional peaks.

B/N+15 - Base/Neutral Extractable Organic Compounds by USEPA Method 625 with library search for 15 additional peaks.

TPHC - Total petroleum hydrocarbons.

- MW-8 is a coded replicate of MW-1.

All analyses with the exception of methanol and inorganic constituents were conducted by Envirotech Research of Edison, New Jersey.

Methanol and inorganic constituents were analyzed by General Testing Corporation of Hackensack, New Jersey.

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Table 5. Summary of Water-Level Data.

			Jan 5/6, 1	1998			Feb 24, 1	.398			Mar 1	1, 1988	
Де]] 	Elev. M.P.# (ft-ms1)	DTW (ft)	Product Thickness (ft)	Corrected Thickness (ft)	Elev. Water Surface (ft-msl)	ЭТШ (ft)	Product Thickness (ft)	Corrected Thickness (ft)	Elev. Water Surface (ft-msl)	DTW (ft)	Projuct Thickness (ft)	Corrected Thickness (ft)	Elev. Water Surface (ft-msl)
MW-1	19.51	13. 15	-	-	6.36	12.37	-	-	7.14	12.50	-	-	7.01
MW-2	16.95	7.55		-	9.40	7.92	-	-	9.03	8.01	-	-	8.94
MW-3	21.79	10.24	-	-	11.55	9.67	-	-	12.12	9.99	-	-	11.30
MW-3D	21.50	14.43	-	-	7.07	13.46	-	-	9.04	13.64	-	-	7.95
MW-4	19.35	8.68	-	-	10.67	4.41	-		14.94	4.97	-	-	14.38
MW-5	20.47	11.06	-	-	9.41	10.50	-	-	9.97	10.31	-	-	10.15
MW-6	19.63	14.03	-	-	5.60	13.37		-	6.26	13.52	-	-	5.11
MW-6D	19.19	13.54	-	-	5.55	13. 10	-	-	6.09	13.27	-	-	5. 92
MU-7*	20.08	13.17	~2	1.70	8.61	12.35	1.95	1.67	9.40	12.75	2.29	1.95	9. 28

Notes:

- Elevation of Measuring Point (measured from the top of steel protective casing).

DTW - Depth to Water.

msl - Mean Sea Level.

Elev. - Elevation.

(*) Well contains product, a correction was made for product density.

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Tank	•=	Sample ed ID	Paramete	r Concro- tion	Leboratory
A-25	9-27-6	37 A-25(1)	TPHC	100	
-	,	R-25(2)		10U 10U	Eseiretech
		A-25(3)		100	
		A-25(4)		10. 2	
-3	10-1-8	7 C-3(A)	TPHC	424	Envirotech
		C-3(B)	TPHC	100	
		C-3(C)	TPHC	75	
		C-3(D)	TPHC	23	
		C-3(E)	TPHC	89	
		C-3(F)	TPHC	24	
		C-3(F:11 C-3(Ezce) TPHC	369 18	
26	10-5-0	7 A-26(A)			
40	10-3-8	A-26(B)		419	Enviratech
		A-26(C)	TPHC TPHC	58 1250	
		A-26(D)		489	
27	10.0.				
21	10-5-87	A-27(A)	Methanel		Enviratech
			Hethanai		
			Methanol		
			Methanoi	2. OU	
1	10-7-87	A-4(A)	TPHC	3410	Envirotech
		A-4(B)	TPHC	72	
		A-4(C)	TPHC	291	
		A-4(D)	TPHC	100	
		A-4(E) A-4(Excv)	TPHC TPHC	97 96	
	10-14-05				
	10-14-0	7 A-9(A) A-9(B)	Taluene Taluene		General Testing
			Taluene		
			Toluene		
		A-9(Comp)			
0	10-20-87	A-10(A)	Toluene	299	General Testing
		A-10(B)	Taluene	342	iesting
		A-10(C)	Teluene	261	
1	10-22-87	A-11(A)	Toluene	110	General Testing
			Taluene	72.6	
		A-11(C)	Taluene	130	
?	10-26-87		Toluene	3. 33	General Testing
			Taluene	594	
			Toluene	34.6	
		A-12(D)	Teluese	64.6	
	11-18-87		TPHC	9160	Seneral Testing
		C-2(B)	TPHC	3230	•
		C-2(C)	TPHC	7520	
		C-2(D)	TPHC	2150	
		C-2(E) C-2(F)	TPHC TPHC	(37. 0 2470	
	11-23-87		TPHC	1750	General Testing
		-1(B)		18,500	
		-1//1		F1 FA	
		-1(C) -1(D)	TPHC TPHC	5150 3390	

Notes:

IPHC - Total Petroleum Hydrocarbons

Are im ag/g (ppm) All concentrations are in ug/g (ppa).

U - Undetected; the prefix shows detection limit.

Excv - Excavated material.

Comp - Composite sample,

Envirotech Research of Edissa, New Jersey and General Testing Corporation of Hackensack.

New Jersey performed the analytical wort. Sample C-3(Exec) was analyzed by General Testing Corporation.

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Table 7. Constituent concentrations in Soil Samples from Exploratory Soil Borings.

Parameters	S -1	l 5-2	\$-3	\$-4	\$-5	S-6	S-7	S-8	S-9	S-10	S-11	S-12	M⊌-5	Fre!d Blank
Volstije Organic Compounds		••••••								••••••••			••••••	
Benzesa														
Chlaratenzene							600 0	5600						
Ethrl benzene							1700J		10J				NA	
lethrlene chiaride			7.838	8. 8JB	7.4JB	8.318	17003		0.010	0.510			NA	
etrachioroethene					8.01	0. 370			8.9JB	9.618			NA	13.8
oluene	36600	16800000		193	4. 4.	49	5280,000	1120000				163	HA	
r-chlorofluoromethane	5101			•••		7,	3/200,000	1170,000		143	131	72	NA	
rienes (Total)	11001						4500J	1200J					NA	
otal Volatiles	39210	16800000	7.8	27.8	15.4	57. 3	5292200	1126800	18.9	27.6		26	NA	
						57.5	21 31100	1170000	10. 3	23.6	13	114	на	13.8
ose/Neutral Extractable Organic Compounds														
phthalene		2800	20.7											
enaphthylene		2800	20 J				770	2001						
enaphthene			150J	2C0J					390					NA
ourene	901		101						301					NA
enanthrene	1903	3400	1501	3001						1601				NA
thracene	1201	850	150J 54J	220J	40J		1000	62J	E30	991	18	801		NA
butyl phthalate	50J	930	241	601			1001		2001	201				NA
unranthene	401	4100	3201	70JB		46JB		301B		8718	20 J B			HA
rene	703	5910	455	510	701		510	403	1400	170J	20 J	330		NA
s(2-ethylhexyl) phthalate	630	2700	433 280J	650 100J	70J		3001	381	1600	1301	20 J	340		NA
rysene	000	4000	390	590	200J	651	610	481	1001	64J	311			NA
nzo(a)anthracene		3000	320J	330 480	601		2001	20J	1300	971	20 J	420		NA
nzo(b)fluoranthene		5690	765	40V 810	50J		200J	201	1100	70 J	20 J	330		HA
nzo(a)pyrene		2400	370	610	50J 50J		280J	301	1900	1303	403	1000		NA
dena(1,2,3-c,d)prrene		950	1701	3101	JUJ		801	101	1300	68J	20 J	560		NA
benza(a,h)anthracene		330	601	701			80J	71	640	381		270J		NA
nzo(ghi)pezylene		960	1603	3001			***		200 J			40J		NA
tal Base/Neutral Extractable Organic Compounds	380	37760	3674	4980	590	111	30J 4100	505	570 11460	30J 1163	259	240J 3610	0	NA NA
tal Petroleum Hydrocarbons (mg/kg)	1070	4660	63				600	180				300		на
tal Fhenol (mg/kg)	3.7	200												
1231C 9C+d	ná	119	NA	за	NA	110								
izal denyde	112	NA.	NA NA	NA	NA NA	na Na	HA 	NA	NA	NA	NA	NA		NA
•		1111	(177	1111	nH	ин	NA	NA	NA	NA	AA	NA		NA

will concert ations are in uplky units unless specified.

Samples were collected between December 9 and 17, 1987 and were analyzed by Envirotech Research of Edison, New Jersey.

The + eld blank was collected on December 17, 1987.

Table B. Constituent Concentrations in Ground-Water Samples from Monitoring Wells.

Parameters		MW-8# (MW-1 eplicate)	MW-2	MW-3	MU-30	Mu-4	# U -5	HV-6	MW-6D	Freld Blank	Trip Blook
Uslatile Organic Compounds	••••••						••••••		••••••		
Senzene	676	960	1.53			34003					
Chlorobenzene trons-1,2-Dichloroethene	4.73	5.6J	2. 9 J		23						
Ethyl tenzene Tetrachlarmethene	15	15	1. SJ								
Toluene	22	24	1.13	5640	5.1	98700	6370		2.5J	1.0J 1.8J	1.5J
Trichlaraethene					4. OJ		1400		1. BJ		
Total Xylenes Total Volatiles	1 7 734. 7	16 102 0 . 6	7.0	5640	32.1 1	00100	7770	3. 0J 3. 0	4.3	2. 8	3, 4J 4, 9
Base/Heutral Extractable Organic Compounds											
1.3-Dichlorobenzene			4. OJ							NA	NA
1,4-Dichlorobenzene			7.93							NA	NA
1,2-Dichlarabenzene			5. 5J							HA	NA
.2.4-Trichlorobenzene			0.5J							NA	NA
iaphthalene	1.8J	1.9J	37.0	23	1.03	60.6	0.51			NA	NA
icenaphthese			4. 3J			0.4J				HA	HA
luorene	0.7J	0. 7J	9.31			6. 1J	0.4J	0.43		NA	NA
K-Nitrosodiphenylamine						0.31				NA	NA
henanthrene		0. 1J	1. ZJ			16.6	0.21			NA	NA
nthracese			0. 9J			3.43				HA	NA
luorantheme			0. ZJ			9. 3J	0.1J			HA	hA
утеле			0.31			6. 9J				NA	NA
Bis(2-ethylhesyl) phthalate			1. 2J		1.0J	6. 31			2. 5J	HA	ня
hrysene						3.01				NA	NA
enzo(a)anthracene						3. 01				NA	NA
ir-s-ectyl phthelate						24.7				NA.	NA
lenzo(b)fluoranthene										MA	HA
enzo(a)pyrene						2.43				HA	NA
adene(1,2,3-c,d)pyreae						1.0J				HA	NA
enze(ghi)perylene otal Base/Neutral Extractable	2.5		92.2	,		1.03				NA NA	KA
Organic Compounds	2.3	2.7	72.3	2	2.0	145	1.3	0.4	2.5	NA	
enzero Acid	NA	на	NA	NA.	NA	NR	HA	NA	NA	NA	NA
enza I deny de	NA	NA.	NA.	HA	NA	570	.,,,,,	NA.	NA	NA.	NA NA
ther Parameters (mg/L)											
otal Petroleum Hydrocarbons			2.6			8.0			HA	NR	
nenols	0. 20	0. 15		2570	122	4.65			HA	NA	
ormal dehy de		HA	NA	HA	NA	NA	NA	NA	HA	NA	HA
ethanol	5.9	NA	(2.0	120	NA	HA	HA	HA	NA	KA	NA

Samples were callected between January S and 6, 1988. Analyses were conducted by Envirotech Research of Edison, New Jersey.

Rethanal camples were analyzed by General Tosting Corporation of Hackensack, New Jersey, NA - Not Analyzed.

J - Compound detected below mothed detection limit.

All concentrations are in ug/L unless otherwise noted.

6F27. vt 1

Table 9.	Constituent Concentrations
	from Manutarina Well MW-7.

g Product Sample Collected

Parameters	Concentration
Volatile Organic	
Compounds	
Benzene	
Chlorobenzene	
trans-1,2-Dichloroethene	
Ethylbenzene	
Tetrachloroethene	
Toluene	54100 0
Trichloroethene	
Total Xylenes	
Base/Heutral Extractable	
Organic Compounds	
1,3-Dichlorobenzene	
1,4-Dichlorobenzene	
1,2-Dichlorobenzene	
1,2,4-Trichlorobenzene	
Naphthalene	580
denaphthene	150J
leorene	340
l-Mitrosodiphenylamine	
hementhreme	760
Inthracene	60J
luerantheme	170J
Prene	150J
is(2-ethylhexyl)phthalate	
hrysene	801
enzo(a)anthracene	70J
i-m-octyl phthalate	, .
enzo(b)fluoranthene	40J
enzo(a)pyrene	601
ndeno(1,2,3-c,d)pyrene	20J
enza(ghi)perylene	FA4
enzoic Acid	HA
azal dehy de	NA
ther Parameters (mg/L)	
ital Petroleum Hydrocarbons	408900

Analysis was performed by Envirotech Research of Edison, New Jersey.

HA - Not Analyzed.

I - Compound detected below method detection limit.

All concentrations are in mg/kg unless otherwise noted.

Table 10. Concentrations of Inorganic Constituents in Sample from Monitoring Well MW-3.

Parameter	Concentration (mg/L)
Chlorides	763
Bicarbonate as CaCO3	160
Nitrate and Nitrite as N	0.18
Total Dissolved Solids (@ 1 degree celcius)	80 37,490
Sulfates	35,000
Calcium	4. 50
Iron	2280
Magnesium	72. 0
Manganese	5. 98
Potassium	36. 9
Sodiuma 	4130

The sample was collected on January 6, 1988 and was analyzed by General Testing Corporation of Hackensack, New Jersey.

gf29. vk1

7

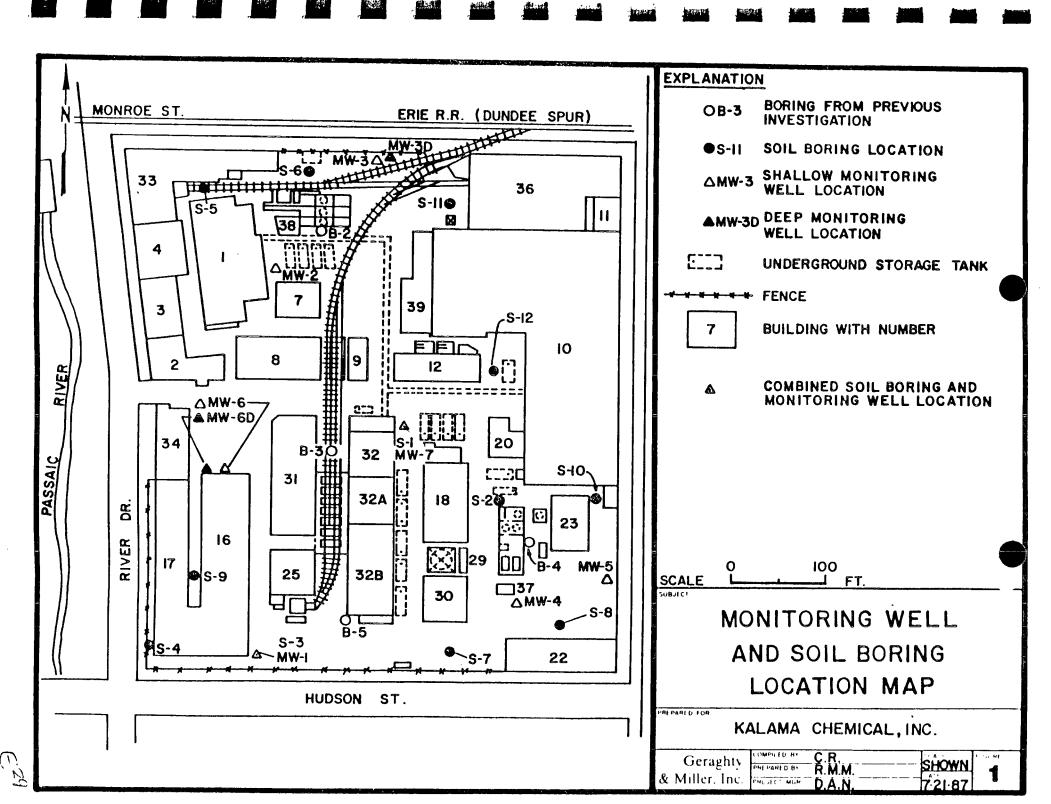
Table 11: Summary of Product Removal Data - Monitoring Well MW-7

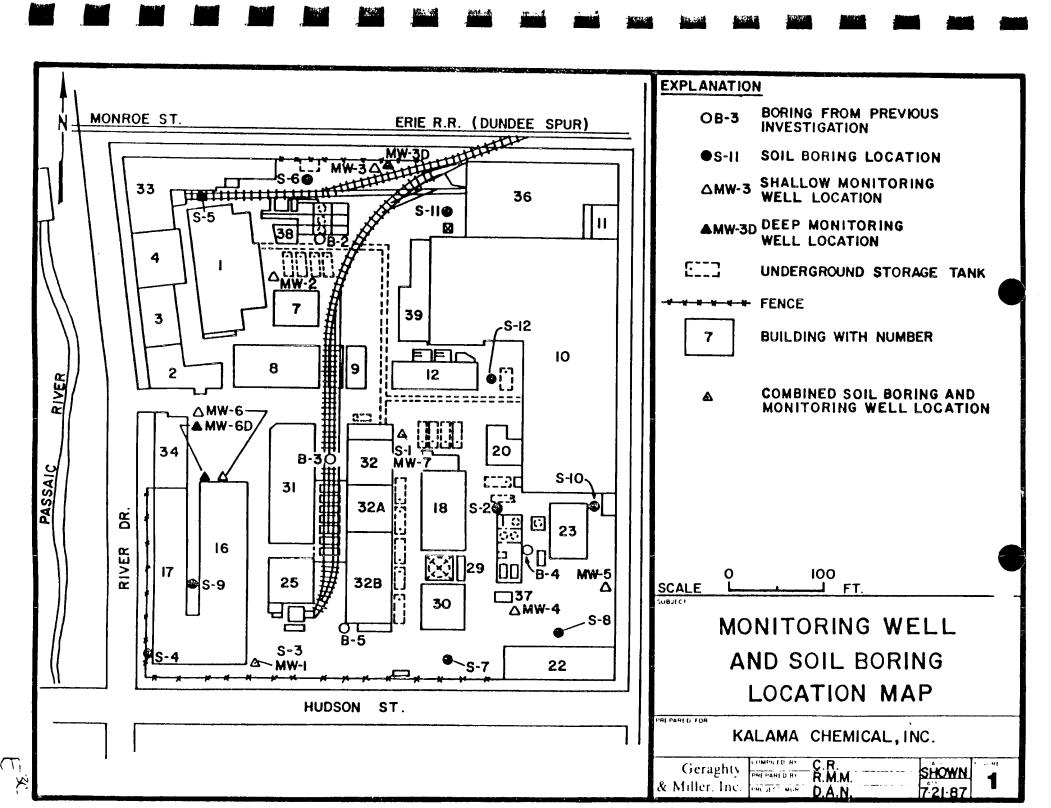
DATE	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (ft)		AMT. PRODUCT	AMT. WATER REMOVED (gal)	(AFTER DEPTH TO PRODUCT (ft)	PRODUCT F DEPTH TO _WATER (ft)	PRODUCT THICKNESS (ft)
5/12/88	10.67	HA	>1.25	4	4	12.00	12.00	TRACE
5/23/88	10.67	4.25	0.58	0.4	4	11.50	11.50	TRACE
6/3/88	10.83	11.17	0.34	0.2	5	12. 25	12. 25	TRACE

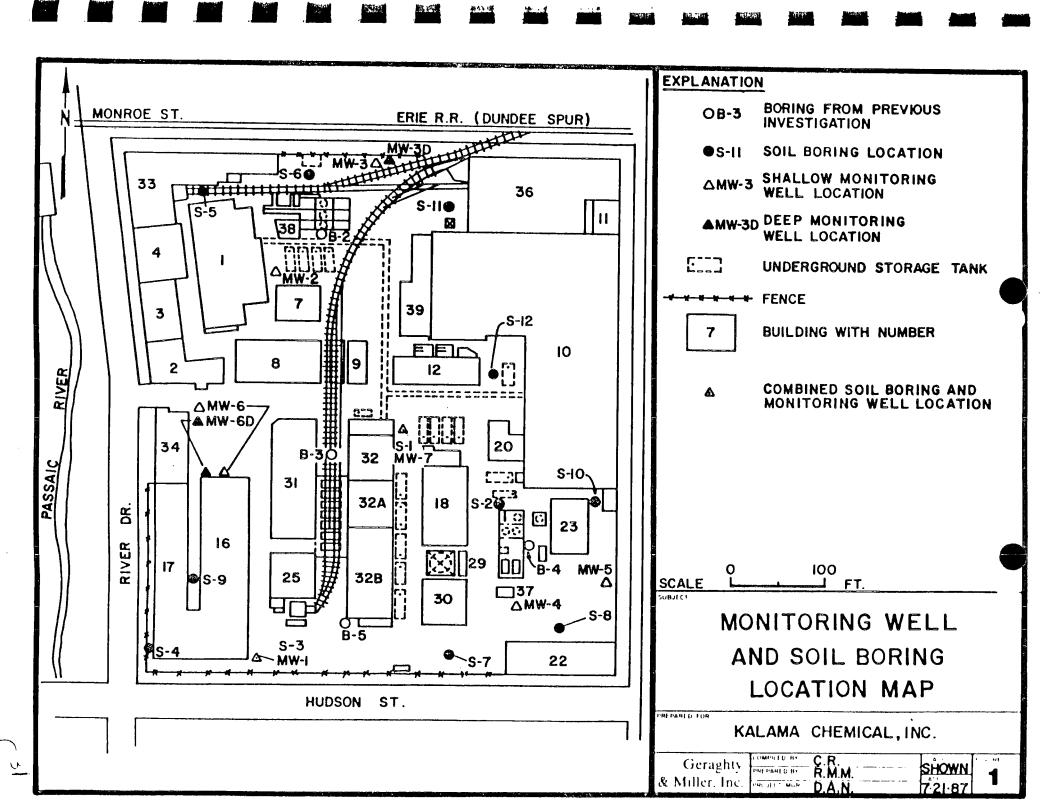
NOTE:

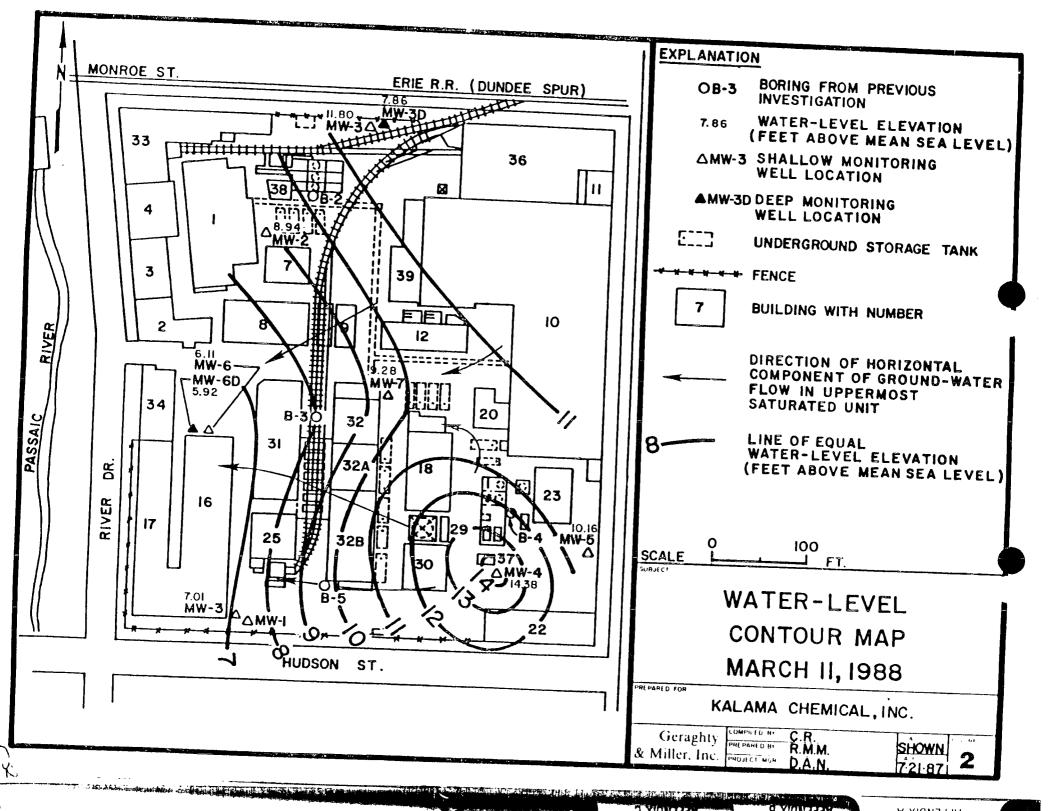
NA - not able to measure

F 2's











LOCATION SKETCH

Well(s)	Project/No	Pageof
lite Location	Kolana - Confield	
Observer	c. Ray (9-22-87)	
Locate all wells, bovells, roads, and po	rings, etc. with reference to three permanent referencent features)	erence points; tape all distances; clearly label all
	< / / lensk)	
DTU= 9 f	1	Tank Dimensions N
	Monroe St.	17 (5) x16 = 400 (3.142) 1256.8 ft
^	Fece (1) @ 8/4	1256 & ft = - 12
ft , = =================================	O • —	≈10,00 (4), (8f)
15:		10 5
	Flam (3)	Note: Sample interval
•		@ Scargle locations
	Oft ft	



LOCATION SKETCH

10/1/87

Well(s) Trop Cos Proj	ect/No. <u>J 10 80 G F 2</u>	Page	of
Site Location	Ganfield		
Observer	C Ray	* * * * * * * * * * * * * * * * * * * *	
(Locate all wells, boring wells, roads, and perm		points; tape all distances	; clearly label all
Tank cled.	24'		N.
Bldg (-30'-)	Building D	10 5 10 5 1 C 75	P1 -> 32
. ,	samples collected @ 77.5	for depth interval.	
	3(A) Material brought by control 3(filly - composite) Took sam 3(lemoral) - " Summer location can right supplied of	ples by a clear atoms of the pulso see bags. Remove	in Heart it
	Off fr		



LOCATION SKETCH

ite Location	Kalama_		
bserver	(Ray (10-5-87)		
ocate all wells, boring ells, roads, and perma	s, etc. with reference to three permanent reference punent features)	oints; tape all distance	s; clearly label all
-27			5
	3 f+	/Bldg-#3.	
B129#1	B of the state of	Stairs	
	COLLINA	7	A = 4f+ b, c, \$ D @ 4-4.
}	SIL 8 #4	Mettra	· mel_
. /	<u> </u>	€ Samp	le location
	former Benzoic Acid Benzaldelyde ava	Depths of	3.75-4.25 A
, 1	lors 2ft	ę.	
4'	lin 2ft Kence (cambri	D dyc	
	Cambridge St.	TIHC	
	Bldg# 22		
(stars() on the		

& Sample location

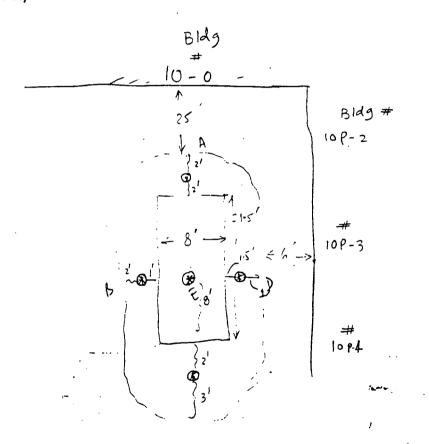


Well(s) <u>A - 4</u>	.Project/No	T1080GF2	Page of
• •		c c c c \	¥

Site Location

Observer

(Locate all wells, borings, etc. with reference to three permanent reference points; tape all distances; clearly label all wells, roads, and permanent features)



Depitro

9.5-10.5

95-10.5

9.5-10.5

9.5-10.5

-105-11.01

1 Sample location

Depth to water @10.5 bgs log - 0-0.5. Asphamil jaring

0.5-10.5. Fill, n-c sand avoid

oblis occasional

black sill to 1...

impres, moist, brown

Tank was Q23ft below extend bottom/2 ft of trans .; 1100 - intect

Oft Ħ



ite Location	KALAMA		of
bserver	C Ray		
cate all wells, bo ils, roads, and pe	rings, etc. with reference to three permanermanent features)	ent reference points; tape all distanc	es; clearly label all
 		Tank (A-9	N
		** 1.5	Exterior
	Center - of tank		#20
	fonterio Sid	or 12	!
		- di	Pagentu .
!	1 Bldg #18		
		Septh.	B ~ 815~9 C - 81570910
	-		D - 10.5-12 . sohin
	0 ft	n (6-07 glas jus 1+La for TPHC can



Well(s) A - 10 Pr	: :ninet/Na (J10804F2			
Site Location		ama		Page	of
Observer		Ray · (10-20-8	7)		
Locate all wells, borin	gs, etc. with ref	erence to three permane	ent reference points: tape	all distances:	deady label all
ens, reads, and pen	natient leatures	so .		- a. a.a.a. (653,	doary label all
».19	31/10	o {			
7	27.5 fr (= i	28ft overall	مه ان	ont -	N ·
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Tank lungth =		·10		• อเบ็	-
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		Eld = 13			aple location
				Sample	•
		•			N.17 Pr
		A #		· · · · · · · · · · · · · · · · · · ·	- n .
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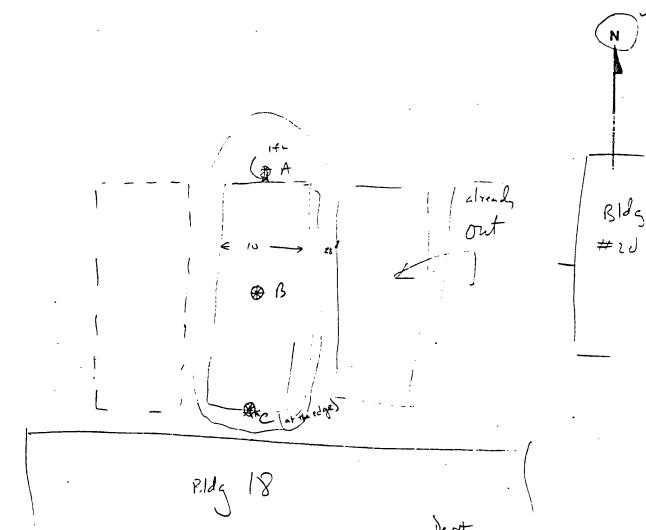




Tank

Weli(s)	- Project/No. 1 1080GF2	Page
Site Location	Kalama_	
Observer	C Ray	

(Locate all wells, borings, etc. with reference to three permanent reference points; tape all distances; clearly label all wells, roads, and permanent features) 10-22-87



0 ft

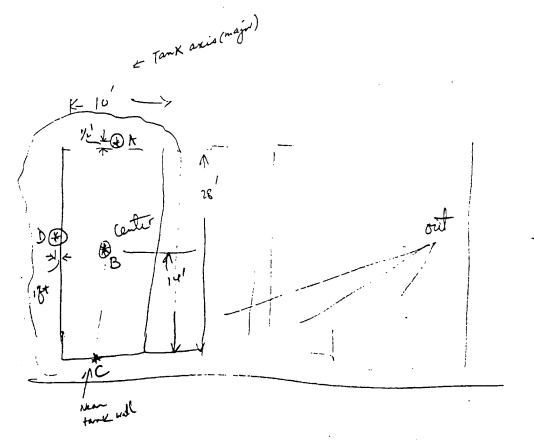
A - 12-14 f+

1 Sandelocation



Well(s) A -12 Project/No. J 1080 GF =	Page of
Site Location Kalama_	
Observer @ Ray	

(Locate all wells, borings, etc. with reference to three permanent reference points; tape all distances; clearly label all wells, roads, and permanent features)





Well(s)	_ProjecuNo. <u>Kala</u>	ma/J10	80 GF2	Page/of	1
Site Location	Garfield				
Observer	Peter M;	lionia			
(Locate all wells, wells, roads, and	borings, etc. with referer permanent features)	nce to three permanent	reference points; tap	pe all distances; clearly la	abel all
	/	1 1 - 1	Bui	lding 5	
3 photogra		25		7 5	N
vere taker the excavat			7'	<i>i </i>	
	1	A (10' depth) ilde of side			
	C(7 feet)	E (12 feet)		The depth of	, v
,		B (12'depth)		Excavation r	· · ·
		<u> </u>	6	feet at T	he enda
		27'	tr	12 feet	in the
			K	idale Sar	njelle
Tank C	C(a)		A	A, B, C, & D	the middle
				of pack of	The regione
diameter of	6 feet 24 feet			walls (laterall)	, speaking).
one photog	eraph was	taken of n	The tank	•	·



		LUCATION	SVEICE	,)	
Tank Well(s) E-1	·	0809F2	(11/2	3/27/	/	
Well(s)	Project/No.				Page	of
Site Location	Kalama		· · · · · · · · · · · · · · · · · · ·			····
Observer	C Ray					
(Locate all wells, b wells, roads, and p	orings, etc. with refere permanent features)	nce to three perma	enent referend	e points; tape	all distances;	clearly label all
Tank	Dimensions	10' dia.	28' lm	Í		
		da 20		_		· N OI
F-1 (18t	5-05-14-	144	Bldg 10P-5-		
	E-1 (D)		Depths	bgs	(f.1)
				E-/(A))	8-10
				` '))	
	AFB- by to Creph &	tubu	10 mg 1 lo	oxler - fa	sample la or the cents.	of burket.

0 ft

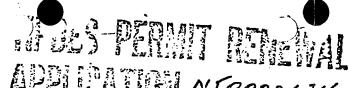
Ħ

dells/ Borings	Description)+0-5 (4t-+t)
MJ-1	Associt moved with gravely stones and holicks.	1-2.5
	Sand, fine, with some solt and gravel precess reliawish-brown, conesive, slightly moist.	2,5-6,5
	Sand, medium to coarse, with some gravel and stone fragments, gray-brown color, moist.	6.5-10.5
	Sand, coarse, with gravel and shale fragments, wet. Water at 11 feet.	10.5-12.5
	Sand, fine, with trace silt, red-brown. Becomes more silty at bottom.	12.5-22.0
⊿ M−5	Concrete and gravel.	0-1.0
	Crushed stone and brick pieces.	1.0-3.0
	Sand, medium to coarse, with large gravel pieces, yellowish-brown color, slightly moist.	3.0-5.0
	Sand, fine to coarse, with crushed stones and shale fragments, gray to brown color, color changes to gray-black at 9.0 feet. Water at 9.0 feet.	5.0-11.5
	Silt, clay and very fine sand in intermittent layers, maximum thickness of individual layers 0.25 inch, gray	11.5-17.0
	color, very cohesive.	11.5 17.0
M4-3D	Fill: medium to coarse sand with silt, gravel, cinder pieces, and coal. Brown to black color, slightly moist.	0-2.0
	Sand, fine to coarse, with soit, gravel and shale fragments, slightly ochesive. Elizarish-yellow color, wet at bottom.	2. 0-7.1)
	Coal. Black color, wet, severy smell.	1,0-9,0
	Plays compact, with these or solt, graveb ack solons, were soles we.	F 0-15
	Clay with some suit/ gray color.	15.0-20
	Enlit mixed with fine sand; intermittent arens of suit to fine sand.	20.0-36.0

	Fragmented shake with some suft and time sand, red-brawn color.	75, 1-42, ()
~ ,-;	Contrate and Lange grave . Water at 1.5 of the ownground profess.	1.3
	pand, maanse, with grave and prace suit. Brownishmeed color,	2.0-3.0
	Silt and fine sand with some clay. Gray color.	5.0-11.0
	Sand, coarse, with gravel, shale fragment and some suit, gray to brown color.	11.0-17.0
MW-5	Haphait, gravel, comples, and a layer of brick.	0-2.0
	Sand, medium to coarse, with some gravel, red brown, slightly moist.	2.0-6.0
	Sand, fine to coarse, with shale fragments, trace silt and some gravel, red-brown in color. Water at 3.0 feet below ground surface.	5.0-13.0
	Sand, fine to medium, with some silt, brownish red color.	13.0-21.0
M4-50	Aspnalt and gravel.	0-0.5
	Fili: Coarse sand with gravel and trace silt, gray to yellow-brown color, slightly moist.	0.5-4.5
	Sand, coarse, with gravel, brown, moist.	4.5-10.0
	Sand, fine to coarse, with some silt, intermittent layers of silt, clay, and medium sand, water at 11 ft.	10.0-26.0
	Sand, fine to medium, with some silt, clay, shale pieces.	28. 0-30. 0
	Crushed sandstone and snate tragments with come solt and fine sand, red color.	30. 0-32. 5
₄ =^	Arobalty shower and grave .	9-1.3
	Fig. 1 coarse candulgrevel and come soloublinks colony molect, in	1,0-5,0
	Sand, had um, with some of the gray- black opers	5.0-3.0

	Char and soft, graymorown, moust,	8.0-10.0
	Rando Radoum to coarray gray-coars, wet with water.	i 2. 3 - 11. 7
	ents fore to hed ups with some solts. Gray onlyss with interned abe wayers of asly black saud.	11. Y-13.)
	Sand, fine, with hilt, brownightief,	19, 0-22, 3
Sort Borings		
8-1	Same as YM-7.	
S-2	Asphalt, stone, and gravel.	0-2.0
	Sand, fine to coarse, with some gravel, trace silt, red brown to gray color. A layer of solvent/weter at the bottom of the spoon (at 4 ft).	2.0-4.0
S-3	Same as MW-1.	
S-4	Top soil, gravel, and stone fragments.	0-1.0
	Sand, fine to medican, gray brown to red brown in color, moist.	1.0-3.5
9-5	Asphalt and gravel.	0-0.5
	Coarse sand, gravel and shale pieces.	0.5-2.5
	Sand, medium to coarse, shale fragments, silt, cohesive, red-brown, moist.	2.5-6.5
	Sand, fine, with some silt, gray color, wet at bottom.	6.5-9.5
9-6	Asphalt and gravel.	0-1.0
	Sand, fine to medium, with some solt, cohesive, yellow-trown, moist.	1, 1-5, 0
	Sand, medium to spanse, with grave! and stone pleces, prove to black to be at bootom.	5.0-3 5
3-7	Assmalt and scores.	0-0.0
	Sandy medyum to coansey grave's stones and brick dieces. Brave	
	CTOWN Colony so went water at 4 ft.	2.0-4.

: + 1	Hoome to otane and grave.	\$ -2. *
	Rand, in he halmed om wyth trade ny ned male diesesy and othine.	2,5-4,5
	lance fine to medica. With original restances and anales red-tonvol, moiss. Wet at bottom of apron (6.5-8.5 ft).	4.5-9.5
3-3	Concrete, gravel, and stones.	0-2.0
	Weathered shale, powder-like, brownish-red, moist.	2.0-3.5
S-10	Concrete and stones.	0-2.5
	Sand, medium to coarse, with some gravel, moist, wet at bottom.	2.5-4.5
S-11	Asphalt, stone and gravel.	0-1.0
	Sand, fine to medium, with some silt, conesive, jellow-brown, moist.	1.0-3.0
	Sand, fine to coarse, with some silt and stone fragments, gray black. Water at 8.0 ft.	3.0-9.0
S-12	Asphalt and gravel.	0-1.5
	Sand, medium to coarse, with gravel and brick fragments, gray color. Water at 5.5 feet.	1.5-5.5



FOR AGENCY USE

FORM APPROVED OMB No. 153-R0100

NATIONAL POLES TANK ASCHARGE LEMINATION SYSTEM
NATIONAL POLES PANT DISCHARGE ELIMINATION SYSTEM
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION I. APPLICANT AND FACILITY DESCRIPTION

Unless otherwise specified on this form all Items are to be completed. If an item is not applicable indicate 'NA.'

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BO

5	OOKLET BEFORE FILLING OUT TH	Please Print or Type	
1.	Legal Name of Applicant (see Instructions)	Tenneco Chemicals, Inc.	
2.	Mailing Address of Applicant (see Instructions) Number & Street	290 River Drive	_ Z _ 55
	City	Garfield,	P R
	State	New Jersey	
	Zip Code	1026	S 2
3.	Applicant's Authorized Agent (see instructions) Name and Title	A. W. Dege, Technical Sup Tenneco Chemicals, Inc.	e- - m
	Number & Street Address	Same Same	
	City	103c	
	State	103d	N.
	Zip Code	103e	W.Z.
	Telephone	1037 201 779-0570 Number	AAGE ORK
4.	Previous Application If a previous application for a National or Federal discharge permit has been made, give the date of application. Use numeric designation for date.	Area Number Code 71 6 21 YR MO DAY	HOO AH 778
l ce	rtify that I am familiar with the infornue, complete, and accurate.	Amendment ation contained in this application and that to the best of my kno	wledge and belief such information
	homas J. LoBue	Works Mana	30er
	Printed Name of Person	1028	Title
	a · 1	78	11 28
_	Mewas 11 to	Lile I	MO DAY
	Signature of Applicant or Auth	urized Agent Date Appl	lication Signed
8 1	I.S.C. Section 1001 provides that:		•

Whosever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudident statement or representation, or makes or uses any false writing or dox ument knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.

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	:	FOF	R AGENCY US	Ę				
acuitad		′ .	**			OFFICE:	EPA Retion Number	ar

	·	. `~		•
5	Facility/Activity (see instructions) Give the name, ownership, and physical location of the plant or	. , . 4.	· · · · · · · · · · · · · · · · · · ·	FOR AGENCY USE
	other operating facility where discharge(s) does or will occur.	B. Company Color	Garfield Plant of	
	Name .	1032		•
		100	Tenneco Chemicals, Inc.	
	Ownership (Public, Private or Both Public and Private)	1056	□PUB □PRV □BPP	
	Check block if Federal Facility	105e	□ FED	
	and give GSA Inventory Control Number	1054		
				. •
	Location Street & Number	1050	290 River Drive	, •
	City	105f	Garfield	
	County	.1. St 17%	Bergen	
	-	1059		
	State	1057	New Jersey	
6.	Nature of Business State the nature of the business conducted	1053	Manufacture of Organic Chemica	ls
	at the plant or operating facility.			
		1065	AGENCY USE	
	-			
7.	Facility Intake Water (see Instruc- tions) Indicate water intake volume			
	per day by sources. Estimate average volume per day in thousand		•	
	gallons per day. Municipal or private water system	1073	529	•
	Surface water		2,750 thousand gallons per day	
	Groundwater	1076	thousand gallons per day	•
		107c _	thousand gallons per day	
	Other*	107d _	thousand gallons per day	
•	Total Item 7	107e _	3,279 thousand gallons per day	
•	If there is intake water from			
	'other,' specify the source.	1071		
•	Facility Water Use Estimate average volume per day in thousand gallons per day for the following			
,	types of water usage at the facility. (see instructions)		2 001	
	Noncontact cooling water	1083	2,801 thousand gallons per day	
	Boiler feed water	103ь	98 thousand gafföns per day	
	Process water (including contact cooling water)	109c _	371 thousand gallons per day	
	Sanitary water	1044	9 thousand gallons per day	
	*rentO	1030	•	
	Total Item 8	1091	3,279 thousand gallons per day	
ۍ. ۱.	f there are discharges to ther," specify,	108y		
; ; 11	f there is 'Sanitary! water use, give he number of people served.	1085	150	

		•		
All Facility Discharges and other	•			FOR AGENCY USE
Losses: Number and Discharge (see				
instructions) Valume Specify the	-			
number of discharge points and the				
olume of water discharged or				
ost from the facility according to				
he categories below. Estimate				
vernes volume per day in thousand	Number of	Total Volume Used	•	

the categories below. Estimate				
average volume per day in thousand		Number of		Total Volume Used
galions per day.		Discharge		or Disclarged,
		Boints		Thousand Callory
Surface Water	10921	4-	10942	2,120
			10342	
Sanitary wastewater transport	10951	1	1	1,113
system	10361		10952	
	· 1		15,000	
Storm water transport system	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1			
Storm water transport system	10901		109c2	
Combined	2540864			• —
Combined sanitary and storm				
water transport system	10943		109dZ	
				
Surface impoundment with no				
effluent	109e1		10902	
	100		1000	
Underground percolation	10917		1 1	
	1.03.7		10912	
Well Injection				
	10991		10992	
Waste acceptance firm	109n;		109h2	
		NT A		2.0
Evaporation	10911	N.A.	10912	38
			103/2	
Consumption	10911	2		8
•	1.0311		109j2	
Other*			1	
Other.	109k1		309×2	
F W				
Facility discharges and volume	1 1		1	3,279
Total Item 9.	10911		10912	
		· · · · ·	1	
* If there are discharges to 'other, '				
Specify.	1			

10. Permits, Licenses and Applications
List all existing, pending or denied permits, licenses and applications related to discharges from this facility (see instructions).

	1	1			_		th free institucti	ons).
110	Issuing Agency	For Agency Use	Type of Permit or License	ID Number	Date Filed YR/MO/DA	Date Issued YR/f.10/DA	Date Denied YR/MO/DA	Expiration Date
.,,	(0)	(0)	(c)	(d)	(c)	(1)	(9)	YR/MO/DA
1.	U.S.E.P.A	•	N.P.D.E.S	N.10000124	71/6/23	74/6/30		79/6/30
								, , , , , ,
2.							-1 -	
3.								

11. Maps and Drawings
Attach all required maps and drawings to the back of this application. (see instructions)

12. Addition	al Information
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112	Item Number	Information



FO	RA	CE	HCY	' U	E
		T	П		T

SECTION II. BASIC DISCHARGE DESCRIPTION

o Complete this section for each discharge indicated in Section 1, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

Page 1 001

[]MCS

11.1

1. Discharge Serial No. and Name

Storm Transport System

FPA FORD TITE 22 12 22

	a. Discharge Serial No. (see instructions)	201:	001	₹·• फ	•					• •
	b. Discharge Name Give name of discharge, if any, (see instructions)	2015	North	River	Water	0ûtfall		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	# \$115.27m2 ** #155.7m2	·:
	c. Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previous discharge serial number.	201c	001			·			ATTIVATOR	1. 21
2.	Discharge Operating Dates									
	a. Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began.	2025	40 - YR MO						•	
	b. Discharge to Begin Date. If the discharge has never occurred but is planned for some future date, give the date (within best esti- mate) the discharge will begin.	202b	N.A.							
	c. Discharge to End Date. If dis- charge is scheduled to be discon- tinued within the next 5 years, give the date (within best esti- mate) the discharge will end.	202c	N.A.				٠			
•	Engineering Report Available Check if an engineering report is available to reviewing agency upon request. (see instructions)	203					1 <u>-1</u>			
	Discharge Location. Name the political boundaries within which the point of discharge is located.	.						•	Agency L	منل
	State	2043	New Je	rsey				1 ,		==
	County	2046	Bergen				- 	2048		
	(d appleable) City or fown	2046	Carfie]					2040		
	Discharge Point Description On carne is into (check rain) Or contractions)	2046						2041		
•	Stress (includes ditches, arroyas, and other intermittent vialercourses)	205.	k l∿iπ							
	ake	1	(Tuki				•:			
(15 to 114		Досі	;						
r.	Consup a Candary Washiwater G. Greet System		()mis	•						
1.	lume and Commined Samtary and			ه م						

	FOR AGENCY U
Municipal Storm Water Transport System	
•	STS LILILI
Well (Injection)	Dwer /
Other	□отн
If 'other' is checked, specify	205b
 Discharge Point — Lat/Long Give the precise location of the point of discharge to the nearest second. 	
Latitude	2062 40 52 MIN 30
Longitude*	2086 74 DEG 07 MIN 0 SEC
7. Discharge Receiving Water Name	
Name the waterway at the point of discharge, (see Instructions)	Passaic River
If the discharge is through an out- fall that extends beyond the shore- line or is below the mean low water line, complete Item 8.	For Agency Use Major Minor Sub 2076 For Agency Use 303e
8. Offshore Discharge	
a. Discharge Distance from Shore	N.A.
b. Discharge Depth Below Water Surface	N.Afeet
9. Discharge Type and Occurrence	
 Type of Discharge Check whether the discharge is con- tinuous or intermittent. (see instructions) 	209a X (con) Continuous
 Discharge Occurrence Days per Week Enter the average num- ber of days per week (during periods of discharge) this dis- charge occurs. 	209b 7days per week
c. Discharge Occurrence —Months If this discharge normally operates (either intermittently, or continuously) on less than a year-around basis (excluding shutdowns for routine mainte- nance), check the months dur- ing the year when the discharge is operating. (see instructions)	ZOSE JAN FEB MAR APR MAY JUL AUG MAY DEC MOY DEC
Complete Items 10 and 11 if "intermittent" is checked in Item 9.a. Otherwise, proceed to Item 12.	
 Intermittent Discharge Quantity State the average volume per discharge occurrence in thousands of gallons. 	N.A. thousand gallons per discharge occurrence.
11. Intermittent Discharge Duration and Frequency	
To Intermittent Discharge Duration For Day State the average number of hours per day the discharge is operating.	N.Ahours per day
b. Intermittent Discharge Frequency State the average number of discharge occur- rences per day during days	211b N. Auscharge occurrences per day

when discharging.

12. Maximum Flow Period

JISCHARGE SERIAL NUMHER 001

FORM A	PPROVED
OMB No.	153-R0100

FOR	AC	Z	+C	Y	US	E

13.	Activity Description Give a	
	narrative description of activ	vits
	producing this discharge-(see	
	instructions)	_

Manufacture	οf	Fumaric Acid
Manufacture	o f	Salicylic Acid .
71	99	Sodium Salicylate
	80	Potassium Guaiacol Sulfonate
-		
		•
		·

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Booklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production.(see instructions)

a. Ruw Materials

SIC Cude	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
43 (1)	(2)	(3)	(-1)	(5)
	l '			
		İ		
	1			
	_1 1			

b. Products

2145	SIC Cride	Name	Maximum Amount/Day	Unit (time Fable 1)	Shared Discharges Contill Number)
	***************************************	·(?)	(3)	(3)	(5)
	2869	Salicylic Acid	2.5	1,000 1	. 002
	•	1	 -		
		· · · · · · · · · · · · · · · · · · ·	ا ــــــ ا		

~**:**,

FO	R A	CEV	CY	USE	
				П	

•=	Waste		
13.	****	ADAI	

a.	Waste Abatement Practices						
	Describe the waste abatement						
	practices used on this discharge						
	with a brief narrative. (see						
	Instructions)						
	with a brief narrative. (see						

2152	Narrative:_	Baro	ometric	Conde	nser	on	vacuum	cooler
	repla	ced	with s	urface	cond	lens	ser.	•
								
								
		<u></u>			•			
							•	•
	ļ	<u> </u>						
								
							•	
215b	(1) ESU	RFA				(3)		
ie v e [•							
	(7)						•	,
	(10)				 ,	(12)		 ,
	(13)		, (14) _	·		(15) .		· · · · · · · · · · · · · · · · · · ·
	1151		43.74					•

(20) __

_. (23) ___

b. Waste Abatement Codes
Using the codes listed in Table
II of the Instruction Booklet,
describe the waste abatement
processes for this discharge in
the order in which they occur
If possible.

_____. (24) _

(21) __

į

(25) ____

·--

001

FOR AGENCY USE

Wastowater Characteristics

· ... :··: ·-- .4 Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis

	Parameter (216;	•	Present	Parameter (216.	Present
Color 00080 -				Copper 01042	
Ammonia 00610		.		Iron	<u> </u>
Organic nitrogen 00605				Lead 01051	-
Nitrate 00620				Magnesium 00927	
Nitrite 00615				Manganese 01055	+-
Phosphorus 00665				Mercury 71900	
Sulfate 00945				Molybdenum 01062	
Sulfide 00745				Nickel 01067	
Sulfite 00740				Sclenium 01147	
Bromide 71870			_	Silver 01077	+
Chloride 00940			-	Potassium 00937	-
Cyanide 00720				Sodium 00929	-
l'luoride 00951				Thallam 01059	\vdash
Aluminum 01105			\top	Titanium 01152	$\left\ \cdot \right\ $
Antimony 01097			一	fin 01102	
Arsenic 01002				Mine 01092	-
Reryllium 01012			7	Mricides*	
Barium 01007			- -	hiorinated organic companyies	
Boron 01022			+;	esticides*	
Cadmium 01027			7	du53 iil and greuse	
Calcium 00916				0550 henots	
Cobalt			3	2730 inflictants	
Chromium			1 3	dorine	
61034 Fecal coliform bacteri	.1	-	50	Phot	_
Specify substances of				alinactivity	

^{*}Specify substances, compounds and/or elements in from 26.

Pesticides (in secticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels, 2nd Edition, Environmental Protestion Agency, Wishington, D.C. 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Unforcement of the Vederal Insecticide, Europicide, and Rodenticide Act.

DISCHARGE SERIAL NUMBER
001

FOI	4 4	4C	E:	ıc,	Y U	SE
					·	

17. Description of Intake and Discharge

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for (see instructions) In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16; ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenois, oli and grease,

, , , , , , , , , , , , , , , , , , , ,			<u> </u>						
	Inf	luent	Effluent						
Parameter and Code	Untreated Intake Water (Daily Average)	In-Plant Treated Intake Water (Dally Average)	🕒 Dally Average	Minimum Value Observed or Expected During Discharge	Maximum Value Observed or Expected During Discharge Activity	Frequency of Analysis	Number of		
Flow*					(3)	. (6)	(7	(8)	
Gallons per day 00056	750,000	N.A.	580,000	220,00	1,160,00	Cont.	NA	NA	
pH Units 00400	7.2	N.A.	X	6.1	7.5	1/30	12	24	
Temperature (winter) F 74028	4 5	N.A.	56	36	98	Cont.	N A	N A	
Temperature (summer) ° F 74027	58	N.A.	88	59	115	Cont.	NA	N A	
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310	21	N.A.	107.8	11	357	1/30	6	2 4	
Chemical Oxygen Demand (COD) mg/l 00340	27	N.A.	121.2	25.9	458	1/30			
Total Suspended (nonfilterable) Solids mg/l 00530	10	N.A.	15	6	21.4	1/30		24	
Specific Conductance microutho√cm at 25° C 09995	N.A.	N.A.		N.A.	N.A.	N.A.	NΑ	NA	
Settlesble Matter (residue) ml/t 60545	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		VA T	

^{*}Other discharges sharing intake flow (serial numbers).(see instructions)

F	OR	AC	E١	IC.	Y	JS	E
	1		:				

ergerom (gg. 13 km), marg Men (gg. 13 km), marg

17. (Cont'd.)

	Infl	uent		Effluent	•	-	
Parameter and Code	Untreated Intake Water (Daily Average)	In-Plant Treated Daily Average)	© Daily Average Minimum Value Observed or Expected During Discharge	Maximum Value Observed or Expected During	Frequency of Analysis	S Number of Analyses	S Sample Type
					THE CONTROL OF	. 7.	
					, 1		
					230 30 0A		
					·		
					. • • •		\neg

	•	•••
 Plant Controls Check if the fol- lowing plant controls are available for this discharge. 	213	·
Alternate power source for major pumping facility.	□ APS	• •
Alarm or emergency procedure for power or equipment failure	IS ALM	
Complete item 19 If discharge is from cooling and/or steam water generation and water treatment additives are used.		
 Water Treatment Additives If the discharge is treated with any con- ditioner, inhibitor, or algicide, 		
answer the following: a. Name of Material(s)	N.A.	· ·
b. flame and address of many- factoryr	2190	
 Quantity (nounds added per million fallons of water treated). 	2195	:

1....

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			į			,	

 d. Chemical composition of these additives (see instructions).

\$16,040	9.4
Z1	
1	· , ,
15.	۷,۰
1000	3.2

3.

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2210

2216

222

2232

223b

224

225

Complete Items 20-25 If there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see Instructions)

Boiler Blowdown

Boiler Chemical Cleaning

Ash Pond Overflow - " THE PARTY OF THE

Boller Water Treatment — Evaporator Blowdown

Oil or Coal Fired Plants — Effluent from Air Poliution Control Devices

Condense Cooling Water

Cooling Tower Blowdown

Manufacturing Process

Other

21. Discharge/Receiving Water Temperature Difference

Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions.

Summer

Winter

22. Discharge Temperature, Rate of Change Per Hour

Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

- 23. Water Temperature, Percentile Report (Frequency of Occurrence) In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions) Frequency of occurrence
 - a. Intake Water Temperature (Subject to natural charges)
 - b. Discharge Water Temperature
- 24. Water Intake Velocity (see instructions)
- Retention Time. Give the length of time, in infinites, from start of water temperature rise to discharge of cooling water. (see Instructions)

u	В	C	C	_
-0	A	P	0	۶

Breo

- □ EPBD
- OCFP
- M COND
- □ ство
- ☐ MFPR
- OTHR

52 39 o_F.

. .

N.A. oF./nour

10%	10% 5%		Maximum		
59° _F	6 3°F	67 °F	68 °r		
100°F	103°F	108 °F	115 %		

68 10Ht/54C.

___3_minutes

STANDARD FORM C - MANUFACTURING AND COMMERCIAL

FOR	AG	EN	CY	US	E
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SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

	1.	Discharge Serial No. and Name							•	
		a. Discharge Serial No. (see instructions)	2012	:. !	-		. . .		~ ···	
	ı	 b. Discharge Name Give name of discharge, if any, (see instructions) 	2016	Central	River	Water Out	fall		المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالي المالية المالية ·	
	•	c. Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previous discharge serial number.	2016	002			. •	٠.		·. ·
2	. c	Nischarge Operating Dates		ļ					. · .	
	а	Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began.	2023	53 - YR MO						
	b.	Discharge to Begin Date. If the discharge has never occurred but is planned for some future date, give the date (within best esti- mate) the discharge will begin.	202b	N.A.						
	c.	Discharge to End Date. If discharge is scheduled to be discontinued within the next 5 years, give the date (within best estimate) the discharge will end.	202c	N.A.					٠	
3.	Ch ava	ngineering Report Available heck if an engineering report is railable to reviewing agency upon quest. (see instructions)	203							
4.	ნი	ischarge Location - Name the Olitical boundaries within which e point of discharge is Incated.							Agency (Use
		State	2042	New Jerse				2040		=
		County	2046	Bergen				2040		
	(if	applicable) City or Town	204c	Garfield						
5.	Cas	scharge Point Description is harde is into (check one); is matrictions)						2041		
	Stra	nen (includes ditches, arroyos, Lother intermittent watercourses)	2053	<u>€</u> ls⊤r						
	i Lar		(Diki						
	Cice	ean .		Пост			:			
	More Tran	orcipal Sanitary Wastewater Osport System		[Irais						
	Mun	negral Combined Sandary and								

[]MCS

Storm Fransport System.

CHARGE SERIAL NUMBER

		002
		And the second s
		FOR AGENCY USE
		POR AGENCY USE
Municipal Storm Water Transport System	-	□ STS
Well (Injection)		□ wer
Other		□ отн
If 'other' is checked, specify	2050	
 Discharge Point — Lat/Long Give the precise location of the point of discharge to the nearest second. 	- 3.5	
Latitude	2063	40 DEG 52MIN 3GEC
Longitude	2065	74 DEG 07MIN 0 SEC
7. Discharge Receiving Water Name Name the waterway at the point of discharge (see instructions)	207a	Passaic River
If the discharge is through an out- fall that extends beyond the shore- line or is below the mean low water line, complete Item 8.	2075	For Agency Use Major Minor Sub 207c For Agency Use 303e
8. Offshore Discharge		
a. Discharge Distance from Shore	208.	N.A. feet
 Discharge Depth Below Water Surface 	20812	N.A. feet
9. Discharge Type and Occurrence		·
 a. Type of Discharge Check whether the discharge is con- tinuous or intermittent. (see instructions) 	2092	图 (con) Continuous
 Discharge Occurrence Days per Week Enter the average num- ber of days per week (during periods of discharge) this dis- charge occurs. 	2096	7 days per week
c. Discharge Occurrence —Months if this discharge normally operates (either intermittently, or continuously) on less than a year-around basis (excluding shutdowns for routine maintenance), check the months during the year when the discharge is operating. (see instructions)	2096	DIAN DEEB DMAR DAPR DMAY DUN DUL DAUG
Complete Items 10 and 11 if "inter- mittent" is checked in Item 9.a. Otherwise, proceed to Item 12.		
10. Intermittent Discharge Quantity State the average volume per dis- charge occurrence in thousands of gallons.	210	N . A . thousand gallons per discharge occurrence.
Intermittent Discharge Duration and Frequency		
18. Intermittent Discharge Duration Per Day - State the average number of hours per day the discharge is operating.	2112	NA
 b. Intermittent Discharge Frequency - State the average number of discharge occurrences per day during days when discharging. 	2115	NA_discharge occurrences per day

NA.

12. Maximum Flow Period Give the

213a

1			

FORM	A	PPROVED
OMB N	lo.	158-320100

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		Γ					П

13.	Activity Description Give a
	narrative description of activity
	producing this discharge (see
	instructions)

1	Manufacture	οf	Formaldehyde
1		. 11	Benzoic Acid -
	11	11	Benzaldehyde
_	19	11	Sodium Benzoate
_	11	• 0	Salicylic Acid
_	• 00	0.7	Methylene Disalicylic Acid
_	H	0.8	Parasepts
_	11	11	Paraformaldehyde
_	11	80	Special Products
_			
_			

14. Activity Causing Discharge For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw inaterial consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Hooklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production (see instructions)

a. Raw Materials

Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
(2)	(3)	(4)	(5)
			2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
		Name Amount/Day	Name Amount/Day (See Table t)

b. Products

2146	SIC Code	Name	Makimum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
2170	(1)	(?)	(3)	(4)	(5)
•	2869	Formaldehyde	110	1,000.15	
	· · · · · · · · · · · · · · · · · · ·				

FOF	R A	GE	r C	Υ (USE.
				T	П

15. Waste Abatement

a. Waste Abatement Practices
Describe the waste abatement
practices used on this discharge
with a brief narrative. (see
Instructions)

b. Waste Abatement Codes
Using the codes listed in Table
II of the Instruction Booklet,
describe the waste abatement
processes for this discharge in
the order in which they occur
if possible.

Narrative:_	Water	scrubi	ber	instal	lled	in	vacuu
syst	em to	absorb	For	maldel	ıyde	va	ors
befo	re bar	ometri	c co	ndense	er.		
					. •		
			- "				
							,
							·
							
(1) EOT1	HER .	(2)			3)		 ,
(4)	 ,	(5)		(6)		
(7)		(8)		 , (9)		
(10)	 ,	(11)		(1	2)		
(13)	 .	(14)		(1	5)		
(16)	 ,	(17)			8)		· ,
(19)		(20)		, (2	1)		 •

(25) _

FOR	AGENCY	USE

16. Wastewater Characteristics

N.A

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate. (See instructions)

idea instructions)			
Parameter §216;	Present	Parameter 216:	Present
Color 00080		Copper 01042	1.
Ammonia 00610		Iron 01045	-
Organic nitrogen 00605		Lead 01051	
Nitrate 00620		Magnesium 00927	
Nitrite 00615		Manganese 01055	+
Phosphorus 00665		Mercury 71900	+-
Suifate 00945		Molybdenum 01062	
Sulfide 00745		Nickel 01067	\vdash
Sulfite 00740		Selenium 01147	\vdash
Bromide 71870		Silver 01077	
Chloride 00940		Potassium 00937	
Cyanide 00720		Sodium 00929	
Fluoride 00951		Thallium 01059	
Aluminum 01105		Titanium 01152	
Antimony 01097		Tin 01102	
Arsenic 01002		Zinc 01092	
Beryllium 01012		Algicides* 7405)	
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022	\neg	Pesticides* 74053	\dashv
Cadmium 01027	十	Oil and grease 00550	\dashv
Calcium 00916	\dashv	Phenols 32730	\dashv
Cobalt 01037 ra	\neg	Surfactants 38260	\dashv
Chromium 01034	1	Chlorine 50060	\dashv
Fecul coliform bacteria 74055		Radioactivity* 7-4050	

^{*}Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels, 2nd Edition, Environmental Projection Agency, Washington, D.C. 20250, June 1972, as required by Subsection 162.7(h) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

DISCHARGE SERIAL NUMBER

002

FOI	RAC	ENC	YL	JSI	Ε
		П	П		
Ш	Ш	Щ	Ш		

17. Description of Intake and Discharge

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for (see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16; ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenois, oil and grease, and chlorine (residual).

in the second of										
	Infl	Influent		Effluent						
Parameter and Code	Untreated Intake Water (Daily Average)	In-Plant Treated Daily Average)	© Daily Average	Minimum Value Observed or Expected During Discharge	Maximum Value Observed or Expected During Discharge Activity	Frequency of Analysis	Number of	1		
Flow* Gallons per day 00056	2,000,000	N.A.	1,540,000	100,00	4,700,000	Cont.	NA	NA		
pH Units 00400	7.2	N.A.	X	6.4	7.5	1/30	12	2 4		
Temperature (winter) ° F 74028	45	N.A.	73	. 45	100	Cont.	NA	MA		
Temperature (summer) ° F 74027	58	N.A.	94	70	101	Cont.	NA	N A		
Biochemical Oxygen Demand (ROD 5-day) mg/l 00310	21	N.A.	9.8	0	40	1/30	6	24		
Chemical Oxygen Demand (COD) mg/l 00340	27	N.A.	24.6	1.0	56.6	1/30	12	24		
Total Suspended (nonfilterable) Solids mg/l 00530	10	N.A.	9.8	3.0	22	1/30		24		
Specific Conductance micromhu√cm at 25° C 00/95	N.A.	N.A.		N.A.	N.A.	N.A.		N A		
Settleable Matter (residue) ml/l 00545	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA	NA		

^{*}Other discharges sharing intake flow (serial numbers).(see instructions)

002

FORM APPROVED OMB No. 158-R0100

FO	R /	١C	Er	ıc,	٧ ر	12	E
	100	1	دلائ	* ,	1		

17. (Cont'd.)

	Influent		Effluent					
Parameter and Code	Untreated Intake Water (Daily Average)	In-Plant Treated (Daily Average)	ධ Daily Average	Minimum Value Observed or Expected During Discharge Activity	Maximum Value Observed or Expected During Discharge Activity	Frequency of Analysis	Number of Analyses	S Sample Type
					•/	1378. 1 ⁷⁷ 2074 Y 1		
						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
				·		2 3 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		
· · · · · · · · · · · · · · · · · · ·								
]
				·				

13. Plant Controls Check if the fol- lowing plant controls are available	218	•	
for this discharge.			
Alternate power source for major pumping facility.		□ APS	·.
Alarm or emergency procedure for power or equipment failure	-i. E		
Complete item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.			
 Water Treatment Additives If the, discharge is treated with any con- ditioner, inhibitor, or algicide, answer the following: 		N A	
a. Name of Material(s)	2192		
b. Name and address of manu- facturer	219b		
 Quantity (pounds added per million gallons of water treated). 	2196		

d. Chemical composition of these additives (see instructions).

2000	*		
136		 	
300			
25.25			
WC374	•		

Complete Items 20-25 If there is a thermal discharge (e.g., associated with a steam und/or power generation plant, steel mill, patroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check "the appropriate item(s) indicating the source of the discharge. (see instructions)

Boiler Blowdown

STATE TO STATE OF THE PARTY OF

Boiler Chemical Cleaning

Boiler Water Treatment - Evaporator Blowdown

Oil or Coal Fired Plants - Effluent from Air Pollution Control Devices

Condense Cooling Water

Cooling Tower Blowdown

Manufacturing Process

Other

21. Discharge/Receiving Water Temperature Difference

> Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions) Summer

Winter

22. Discharge Temperature, Rate of Change Per Hour

> Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

23. Water Temperature, Percentile Report (Frequency of Occurrence) In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions) Frequency of occurrence

> a. Intake Water Temperature (Subject to natural changes)

- b. Discharge Water Temperature
- 24. Water Intake Velocity (see instructions)
- 25. Retention Time. Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see Instructions)

u		
	BCCL	

- APOF --
- ☐ EPBD
- OCFP
- XI COND
- □ство
- MFPR
- OTHR

45 of 2210

48 of 221b

222

2232

223b

224

225

OF./hour

10%	5%	1%	Maximum		
59 _F	63°F	67°F	6 წი _ნ		
90 o _F	950	100 _{0F}	102,		

68 feet/sec.

minutes

FOR	M Al	PRO	VED
OMB	No.	155-	R0100

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STANDARD FORM C - MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. If YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

1. Improvements		Constant		FOR AGENCY USE	
٤.			300	N.A.	SCHED. NO.
	a.	Discharge Serial Number	18 TO		
		Affected List the discharge	301>	·	
		serial numbers, assigned in	133.00	:	
		Section II, that are covered by	1837	l	•
		this implementation schedule.	一度。		 -
		Aughter than town and a com-	100	Ĭ	
	В.	Authority Imposing Require-	1000		
		ments Check the appropriate item indicating the authority for		.i	
		implementation schedule. If	12.70	į	
		the identical Implementation	12.0	T .	
		schedule has been ordered by			
		more than one authority, check		1	•
		the appropriate items. (see	(C.,)	1	
		Instructions)		<u> </u>	
		Locally developed plan	3015	DLOC	
		Areawide Plan		DARE	•
		•	1 A)30	; —	
		Basic Plan		□BAS	
		State approved implementa-	1	ĺ	
		tian schedule	3.5	□sos	
		Federal approved water		_	
		Quality standards implementa-		j	,
		tion plan.		□was	•
		·			
		Federal enforcement proced-		D	
		ure or action	100	DENF .	
		State court order		□ CRT	
		Federal court order		□FED	
•	1	Facility Requirement. Specify			
	1	the 3-character code of those		3-character	
	1	isted below that best describes		(general)	
		n general terms the require-	1 1	•	•
	•	ment of the implementation	301c		*
		chedule and the applicable six-			
		haracter abatement code(s)			
		rom Table II of the Instruction			
		pooklet. If more than one	3014	6-character	
		chedule applies to the facility		(specific)	
		ecause of a staged construction		(see Table II)	
		chedule, state the stage of con-			
		truction being described here			
		vith the appropriate general			
		ction code. Submit a separate			
		ection III for each stage of	1. 1		
	C	onstruction planned.	, ,		

New Facility	NEW
Modification (no increase in capacity or treatment)	MOI
Increase in Capacity	INC
Increase in Treatment Level	INT
Both increase in Treatment Level and Capacity	ICT
Process Change	PRO
Elimination of Discharge	£'))

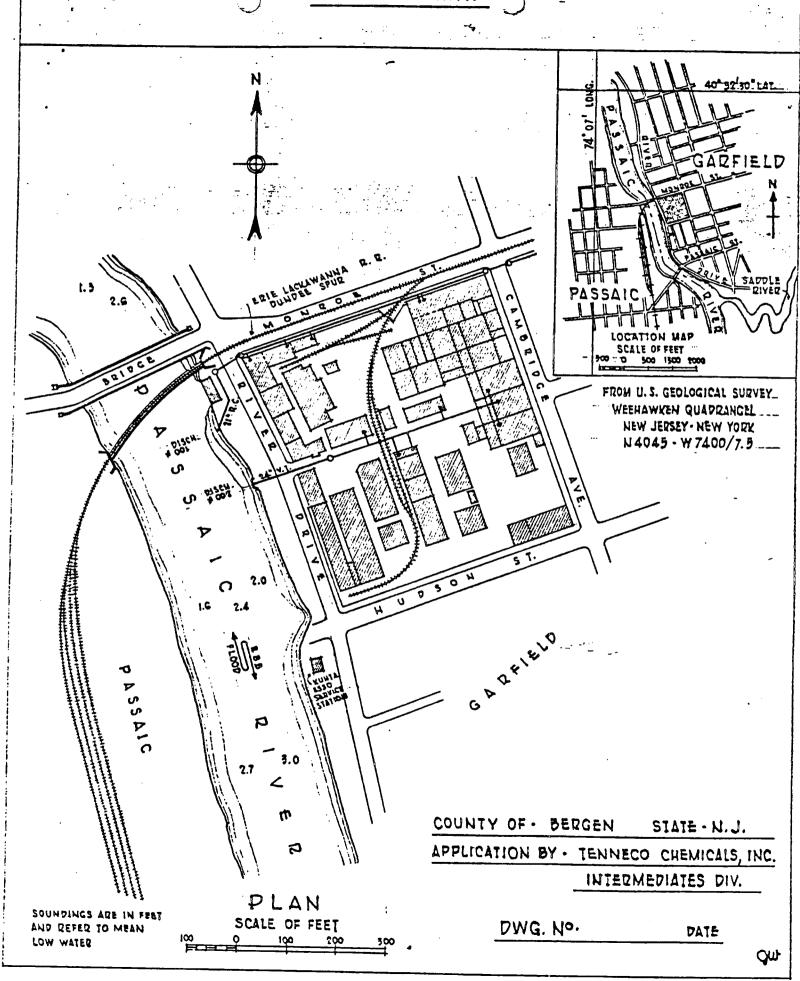
FOF	AGE	HCY	US	E
	T			

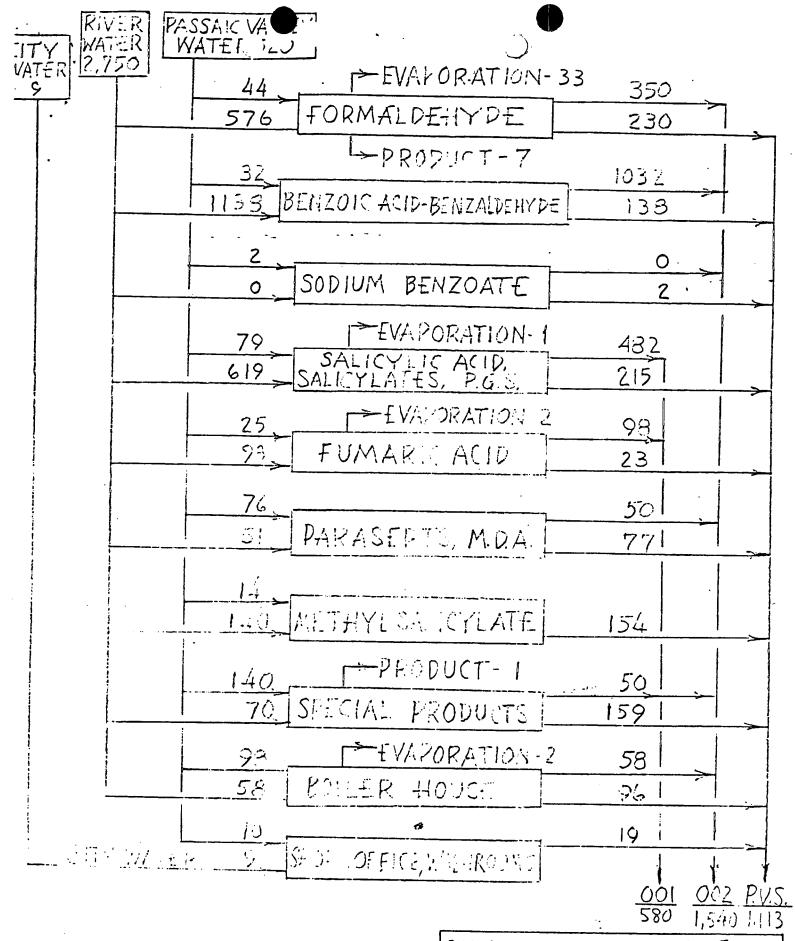
2. Implementation Schedule and 3. Actual Completion Dates

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps	2. Schedille (Yr./Mo./Day)	3. Actual Completion (Yr./Mo./Day)
a. Preliminary plan complete	302»	303a/_ /
b. Final plan submission	3025	303b
c. Final plan complete	3020-	3036
d. Financing complete & contract awarded	3020	3036
e. Site acquired	3025	3030
f. Begin action (e.g., construction)	3021/	3031
g. End action (e.g., construction)	3029//	3039/
h. Discharge Began	302h//	3037/
I. Operational level attained	3021//	3031
	•	W. 189 (C.) [8

OCATION-MAP





THUSCHIDS OF GALS, PER DAY

SCHEMATIC OF WATER FLOW
TENNECO CHEMICALS, INC.
GARFIELD, BERGEN Co., N.J.
NOV. 21,1973
P.10=1.



State of New Jersey

JOHN W GASTON JR., P.E. DIRECTOR

DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

DIRKIC HOFMAN PE DEPUTY DIRECTOR

CN 029
TRENTON, NEW JERSEY 08625 CERTIFIED MAIL
RETURNED RECEIPT REQUESTED

Mr. Hari Goel Kalama Chemical, Inc. 290 River Drive Garfield, N.J. 07026

November 15, 1984

Re: NJPDES Permit No. NJ0000124

Effective Date: January 1, 1985

Dear Mr. Goel:

Enclosed is the final NJPDES/DSW Permit and Notice of Authorization to discharge pollutants to the Passaic River, issued in accordance with the New Jersey Pollutant Discharge Elimination System Regulations, N.J.A.C. 7:14A-1 et seq. Violation of any condition of this permit may subject you to significant penalties.

Within 30 calendar days following your receipt of this permit, under N.J.A.C. 7:14A-8.6 you may submit a request to the Administrator for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory hearing may be found in N.J.A.C. 7:14A-8.9 through 8.13. The request should be made to:

Administrator
Water Quality Management Element
Division of Water Resources
CN-029
Trenton, New Jersey 08625

Application for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1(f)5.

If you have any questions on this action, please contact Mr. Edward Post, P.E., Section Chief, Industrial Permits at (609) 292-0407.

Very truly yours,

Paul C. Kurisko, P.E., Chief Industrial Waste Management Bureau

Water Quality Management



STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF AUTHORIZATION



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ISSUANCE DATE

EFFECTIVE DATE

EXPIRATION DATE

NJ0000124

November 15, 1984

January 1, 1985

December 31, 1989

ISSUED TO

Kalama Chemical Inc. 290 River Drive Garfield, NJ 07026

FOR ACTIVITY/FACILITY AT

Kalama Chemical Inc. Garfield Division

290 River Drive

Garfield, Bergen Co., NJ 07026

OWNER

Same as Applicant

ISSUING DIVISION

W Water Resources ☐ Coastal Resources

☐ Environmental Quality

TYPE OF PERMIT

NJPDES/DSW

STATUTE(S)

APPLICATION NO

N.J.S.A.

NJ0000124

58:10A-1 et seq.

A PERMIT TO

Discharge to the Passaic River classified as TW-2 waters, in accordance with effluent limitations, monitoring requirements, and other conditions as set forth in Parts I, II, III, and IV hereof.

By the Authority of: John W. Gaston, Jr., P.E. Director Division of Water Resources

DEP AUTHORIZATION

Form DEP- 008

7 80

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.



STATE OF NEW JERSEY DEPAR'1. LINT OF ENVIRONMENTAL PROTECTION CN 402

Trenton, N.J. 08625



PERMIT

All the second secretarions

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit. Permit No. Issuance Date Effective Date Expiration Date NJ0000124 November 15, 1984 January 1, 1985 December 31, 1989 Name and Address of Applicant Location of Activity/Facility Name and Address of Owner Kalama Chemical Inc. Kalama Chemical Inc. . Same as Applicant Garfield Division 290 River Drive Garfield, NJ 07026 290 River Drive Garfield, NJ 07026 Issuing Division Type of Permit Statute(s) Application No. N.J.S.A. Water Resources NUPDES/DSW 58:10A-1 et seq! NJ0000124

This permit grants permission to:

Discharge to the Passaic River classified as TW-2 waters. in accordance with effluent limitations, monitoring requirements, and other conditions as set forth in Parts I, II, III, and IV hereof.

Approved by the Department of Environmental Protection By the Authority of: John W. Gaston, Jr., P.E. Director Division of Water Resources

Arnold Schiffman, Administrator

Water Quality Management

New Jersey Department of Environmental Protection Division of Water Resources Industrial Waste Management CN-029

Trenton, N.J. 08625 (609) 292-4860

PUBLIC NOTICE

AUG 2 4 1984

NOTICE: ISSUANCE OF DRAFT NJPDES PERMIT NJ0000124

Notice is hereby given that:

Kalama Chemical, Inc.

Garfield Division
290 River Drive
Garfield, NJ 07026

has applied to the New Jersey Department of Environmental Protection (NJDEP) for a New Jersey Pollutant Discharge Elimination System (NJPDES) renewal permit to discharge non-contact cooling water and stormwater runoff into the Passaic River classified as TW-2 waters.

Kalama Chemical, Inc. manufactures the organic chemicals benzoic acid, benzaldehyde, sodium benzoate, salicylic acid, potassium and sodium salicylate, formaldehyde and fumaric acid. (SIC No. 2869).

The applicant discharges through four different outfalls: Discharge DSN 00la (0.1 MGD) and DSN 00lb (0.5 MGD) contain non-contact cooling water. Discharge DSN 002 (2.5 MGD) contains non-contact cooling water as well as storm water runoff.

This company has been classified as a major industrial discharger by the United States Environmental Protection Agency.

For an existing facility, issuance of the NJPDES permit is the enforcement mechanism by which pollutant discharges are brought into compliance with standards.

This notice is being given to inform the public that NJDEP has prepared a draft NJPDES permit. This draft permit contains conditions necessary to implement the provisions of the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A-1 et seq.), which were promulgated pursuant to the authority of the New Jersey "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.), "Solid Waste Management Act" (N.J.S.A. 13:1E-1 et seq.) and the "Pretreatment Standards for Sewage" (N.J.S.A. 58:11-49 et seq.).

The draft permit prepared by NJDEP is based on the administrative record which is on file at the offices of the NJDEP, Division of Water Resources, located at 1474 Prospect Street in the Township of

Ewing, Mercer County, New Jersey. It is available for inspection, by appointment, between 8:30 a.m. and 4:00 p.m., Monday through Friday. Appointments for inspection may be scheduled by calling (609) 984-4428.

Additional information concerning the draft Permit may be obtained between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday from: Adrian Mallen at (609) 292-4860.

Interested persons may submit written comments on the draft permit to the Administrator, Water Quality Management, at the address cited above. All comments shall be submitted within 30 days of the date of this public notice. All persons, including applicants, who believe that any condition of this draft permit is inappropriate or that the Department's tentative decision to issue this draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEP with respect to the permit application. At the close of the public comment period, the Department will issue or deny the permit. The Department will respond to all significant and timely comments when a final permit is issued. The applicant and each person who has submitted written comments will receive notice of NJDEP's final decision.

Any interested person may request in writing that NJDEP hold a non-adversarial public hearing on the draft permit. This request shall state the nature of the issues to be raised in the proposed hearing and shall be submitted within 30 days of the date of this public notice to the Administrator, Water Quality Management at the address cited above. A public hearing will be conducted whenever the NJDEP determines that there is a significant degree of public interest in the permit decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Arnold Schiffman Administrator Water Quality Management

WQM126-E/PN2:lm1



STATE OF NEW JERSEY LPAR ...IENT OF ENVIRONMENTAL PROTECTION

NOTICE OF AUTHORIZATION



PERMIT	NO.
0000LN	124

ISSUANCE DATE

EFFECTIVE DATE

EXPIRATION DATE

ISSUED TO

Kalama Chemical Inc. 290 River Drive Garfield, NJ 07026 FOR ACTIVITY/FACILITY AT

Kalama Chemical Inc. Garfield Division 290 River Drive

Garfield, Bergen Co., NJ 07026

OWNER

Same as Applicant

ISSUING DIVISION

Water Resources
Coastal Resources

☐ Environmental Quality

TYPE OF PERMIT

NJPDES/DSW

STATUTE(S)

APPLICATION NO

N.J.S.A.

NJ0000124

58:10A-1 et seq.

A PERMIT TO

Discharge to the Passaic River classified as TW-2 waters, in accordance with effluent limitations, monitoring requirements, and other conditions as set forth in Parts I, II, III, and IV hereof.

By the Authority of: John W. Gaston, Jr., P.E. Director Division of Water Resources

DEP AUTHORIZATION

Form DEP- 008

7/80

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.



Let's protect our earth



STATE OF NEW JERSEY TMENT OF ENVIRONMENTAL PROT CN 402 🔑

Trenton; N.J. 08625





The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit Permit No. Issuance Date Effective Date Expiration Date NJ0000124 Name and Address of Applicant Location of Activity/Facility Name and Address of Owner Kalama Chemical Inc. Kalama Chemical Inc. Same as Applicant 290 River Drive Garfield Division Garfield, NJ 07026 290 River Drive Garfield, NJ 07026 Issuing Division Type of Permit Statute(s) Application No. N.J.S.A. Water Resources NJPDES/DSW 58:10A-1 et seq! NJ0000124

This permit grants permission to:

Discharge to the Passaic River classified as TW-2 waters, in accordance with effluent limitations, monitoring requirements, and other conditions as set forth in Parts I, II, III, and IV hereof.



Approved by the Department of Environmental Protection By the Authority of: John W. Gaston, Jr., P.E. Director Division of Water Resources

Arnold Schiffman, Administrator Water Quality Management

(GENERAL CONDITIONS ARE ON THE REVERSE SIDE.)

DATE

* The word permit means "approval, certification, registration, etc."

State of New Jersey Department of Environmental Protection Division of Water Resources 1474 Prospect St., CN-029 Trenton, New Jersey 08625

FACT SHEET FOR DRAFT NJPDES PERMIT TO DISCHARGE INTO THE WATERS OF THE STATE OF NEW JERSEY

No. NJPDES

Application No.

Date: AUG 2 4 1984

NJ0000124

Name and Address of Applicant: Kalama Chemical, Inc.

290 River Drive Garfield, NJ 07026

Name and Address of Facility

Where Discharge Occurs:

Kalama Chemical, Inc.

Garfield Division 290 River Drive

Garfield, Bergen Co. NJ 07026

Réceiving Water:

Passaic River

Classification:

TW-2

I. LOCATION OF DISCHARGE

The above named applicant has applied for a New Jersey Pollutant Discharge Elimination System (NJPDES) permit, to the State of New Jersey Department of Environmental Protection, Division of Water Resources to discharge into the designated receiving water.

A description and/or sketch of the location of the discharge is appended as Attachment I.

II. DESCRIPTION OF FACILITY

The applicant manufactures organic chemicals and discharges through four outfalls: discharge DSN 001a (0.1 MGD) and DSN 001b (0.5 MGD) contain non-contact cooling water. Discharge DSN 002 (2.5MGD) contains non-contact cooling water as well as stormwater runoff.

Page 2 of 6 pages

III. DESCRIPTION OF DRAFT PERMIT CONDITIONS

The effluent limitations, monitoring requirements, schedules of compliance and other conditions of the draft permit are described in Attachment II. Also included in Attachment II is a brief summary of the basis for each effluent limitation and other conditions in the draft permit.

IV. VARIANCE OR MODIFICATION (if applicable)

N/A

V. PROCEDURES FOR REACHING A FINAL DECISION ON THE DRAFT PERMIT

These procedures are set forth in N.J.A.C. 7:14A-7.1 et seq.. Included in the public notice are requirements for the submission of comments by a specified date, procedures for requesting a hearing and the nature of the hearing, and other procedures for participation in the final agency decision.

VI. NJDEP CONTACT

Additional information concerning the draft Permit may be obtained between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday from:

Adrian D. Mallen at (609) 292-0407.

ATTACHMENT I (MAP)



-1

ATTACHMENT II

Page 4 of 6 pages

State of New Jersey
Department of Environmental Protection
Division of Water Resources
1474 Prospect St., CN-029
Trenton, New Jersey 08625

STATEMENT OF BASIS
DRAFT NJPDES PERMIT TO
DISCHARGE INTO THE WATERS OF
THE STATE OF NEW JERSEY

NJPDES APPLICATION No. NJ0000124

DESCRIPTION OF LIMITATIONS AND CONDITIONS

For DSN 001a, DSN 001b and DSN 002:

Limitations and conditions for Total Suspended Solids, Petroleum Hydrocarbons, Chemical Oxygen Demand, Chromium, Zinc and Copper are based on U.S.E.P.A. guidance for cooling and stormwater discharges.

Requirements for pH, Heat and Temperature are based on the company's existing permit conditions.

A compliance schedule is included for the permittee to determine whether or not its thermal discharges are in compliance with the temperature requirements of the State Surface Water Quality Standards (N.J.A.C. 7:9-4.1 et seq.) the Passaic River, classified as TW-2 waters, and, if not already in compliance, to attain compliance within 3 years.

Page 5 of 6 pages PERMIT SUMMARY TABLE

Company: Kalama Chemical Inc.

_Permit #: NJ0000124

Receiving Waters: Passaic River

Location: 290 River Drive

Garfield, New Jersey

Lat:

Class: TW-2

Long:

Review Engineer: Adrian Mallen

Direct Discharges:

Non-contact cooling Water and stormwater runoff. TOTAL

Ave. Flow 001a-0.1 MGD 001b-0.5 MGD 002-2.5 MGD

Max. Flow

Discharge #:001a, 001b, and 002

	Applica-	Files	Existing	N.J.	Technology	Draft	Draft Permit Condition			
Parameter	tion		Permit Condition	Standards	Based Limits	Limits	Monitor Frequency	Monitor Type		
Max. Temp.			(1) (2)			(1) (2)	Continuous			
Max. Flow							Continuous			
pH Range (S.U.)			6.0 - 9.0			6.0 - 9.0	Monthly	Grab		
Suspended Solids mg/l						20	Quarterly	Grab -` '		
Petroleum Hyrocarbons mg/l					10	10	Monthly	Grab		
BOD ₅										
COD mg/l					50	50(3)	Monthly	Grab		
Heat from 001a, 001b, and 002			(4)			(4)	Continuous			
								,		

Notes: (1)DSN 001a and 001b:

November to April 45(113)Max. 33(91.4)Avg.

November to April 40(104Max. 35(95)Avg. May to October 45(113) Max. 40(104) Avg.

(2) DSN 002:

May to October 50(122) Max. 40(104) Avg. (3) Upon written request from the permittee this limit may be changed to 20 mg/l of Total Organic Carbon. (4) The amount of heat added to the receiving waters shall not exceed 1.07 x 10 BTU/day.

PERMIT SUMMARY TABLE

Company: Kalama Chemical Inc.

Permit #: NJ0000124

Receiving Waters: Passaic River

Location: 290 River Drive

Garfield, New Jersey

Lat:

Class: TW-2

Long:

Review Engineer: Adrian Mallen

Direct Discharges: Non-contact cooling: water and stormwater

Ave. Flow 001a-0.1 MGD 001b-0.5 MGD

Max. Flow

Discharge #: 001a, 001b, and 002

runoff TOTA		002 -2.5	MGD						
	Applica-					Technology		Permit Con	ditions
Parameter	tion		Permit Condition	Standards		Based Limits	Limits	Monitor Frequency	Monitor Type
Chromium mg/1						0.5	0.5(1)	Monthly	Grab
Zinc mg/l						1.0	1.0(1)	Monthly	Grab
Copper mg/l						1.0	1.0(1)	Monthly	Grab
							÷		-
						·			-
							The Colombia Colombia		•
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Notes: (1) Monitoring for this parameter is not required unless a corrosion inhibitor containing this metal is used for water treatment purposes.



Etate of New Jersey DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

CN 029 TRENTON, NEW JERSEY 08625

GEORGE G. McCANN, P.E.

Mr. H. Goel 'Kalama Chemical, Inc. 290 River Drive Garfield, New Jersey 07026

DIRK C. HOFMAN, P.E.

DEPUTY DIRECTOR

- I -and ite

DEC 2 1987

Dear Mr. Goel:

Re: NJPDES Permit No. NJ0000124
Municipality: Garfield
County: Bergen

County: Bergen

Discharge Activity: Indirect Discharge to POTW (SIU)

Category: L

This is to inform you that your application for a New Jersey Pollutant Discharge Elimination System (NJPDES) permit is administratively complete. It has been referred to Muhammad Shaikh of the Bureau of Industrial Waste Management for further review. You will be contacted if any additional technical information is required. If you have any questions please contact Muhammad Shaikh at (609) 292-4860.

Sincerely,

William R. McElroy

Bureau of Industrial Waste Management

WQM120:mer

c: Enforcement Metro Region Bureau of Permits Administration Muhammad Shaikh





State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

P. O. BOX CN 029 TRENTON, NEW JERSEY 08625

OCT 19 1982

Dr. Mario Q. Ceprini Manager, Environmental Affairs P.O. Box 365 Piscataway, NJ 08854

Re: NJPDES SIU Permit No. NJ0000124/Tenneco Chemicals, Garfield

Dear Mr. Ceprini:

Enclosed is the final NJPDES/SIU Permit and Notice of Authorization for the subject facility, issued in accordance with the New Jersey Pollutant Discharge Elimination System Regulations, N.J.A.C. 7:14A-1 et sed. Application for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1 (f)5.

We have considered your request as delineated in your letter dated August 24, 1982. At present we insist to keep monitoring requirements for Flash Point as written in Table I on page 10 of the permit. You may request to modify this requirement with the first quarterly report. At that time we will reconsider the monitoring requirements for Flash Point.

Within 30 calendar days following the service of notice the Department's issuance of this permit action under N.J.A.C. 7:14A-8.6, you may submit a request to the Department for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding requests for an adjudicatory hearing may be found in N.J.A.C. 7:14A-8.9 through 8.13.

If you have any questions on this action, please contact Surya Shah, Project Engineer at this Bureau at (609) 292-4860.

Very truly yours,

Kenneth Goldstein, Chief

Industrial Pretreatment Section

Water Quality Management

WQM45-A/F:lml

cc: Mr. Hari Goel, Garfield Plant



STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF AUTHORIZATION



PERMIT NO. NJ0000124

ISSUANCE DATE

EFFECTIVE DATE

EXPIRATION DATE

9/29/82

12/1/82 (

11/30/87

ISSUED TO

Tenneco Chemicals, Inc. P.O. Box 365 Piscataway, New Jersey 08854

FOR ACTIVITY/FACILITY AT

OWNER

Tenneco Chemicals, Inc.

290 River Drive

Garfield, Bergen County

New Jersey 07026

ISSUING DIVISION

☐ Coastal Resources

☐ Environmental Quality

TYPE OF PERMIT

STATUTE(S)

N.J.S.A.

APPLICATION NO

New Jersey Pollutant Discharge

Elimination System (NJPDES) Permit SIU Indirect Discharge 58:10A-1 et seq.

NJ0000124

A PERMIT TO

Discharge industrial wastewater into Passaic Valley Sewerage Commisioners' facility in conformance to the effluent limits and monitoring requirements as stated in Part III Table I and subject to other conditions and requirements stated elsewhere in this permit.



STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION CN 402

Trenton, N. J. 08625





The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

Permit No.	Issuance l	Date	Effective Date	E	Expiratio	n Date	
NJ0000124	9/29/8	32		11/30/	87		
Name and Address of Applicant Location of Activity/F.			y/Facility Name and Address of Owner				
Tenneco Chemicals, Inc. P. O. Box 365 Piscataway, NJ 08854 Remarks Tenneco Chemicals, Inc. 290 River Drive Garfield, Bergen County New Jersey 07026			ve gen County	Same As A	applica	nt	
Issuing Division Water Resources Coastal Resources Environmental Quality Other	7	Elimination S	llutant Discharge ystem (NJPDES) direct Discharge	Statute(s) N.J.S.A. 58:10A-1 <u>e</u>	t seq.	Application No. NJ0000124	

This permit grants permission to:

Discharge industrial wastewater into Passaic Valley Sewerage Commissioners' facility in conformance to the effluent limits and monitoring requirements as stated in Part III Table I and subject to other conditions and requirements stated elsewhere in this permit.

Approved by the Department of Environmental Protection

By Authority Of: Arnold Schiffman, Director Division of Water Resources S.J. Gallla P.E. Jan Paul C. Kurisko, P.E. 9/29/f Z

Acting Assistant Director
Water Quality Management

0000124 0,12.14.

New Jersey Department of Environmental Protection
Division of Water Resources
Permits Administration
CN-029
Trenton, N.J. 08625
(609) 292-5262

PUBLIC NOTICE

AUG 0 2 1982

NOTICE: ISSUANCE OF DRAFT NJPDES PERMIT NJ0000124

Notice is hereby given that:

Tenneco Chemicals, Inc. P.O. Box 365
Piscataway, NJ 08854

has applied to the New Jersey Department of Environmental Protection (NJDEP) for a New Jersey Pollutant Discharge Elimination System (NJPDES) permit to discharge industrial wastewater from its facility at 290 River Drive, Garfield, Bergen County into Passaic Valley Sewerage Commissioners' domestic treatment works. Tenneco Chemicals, Inc., Garfield manufactures the organic chemicals benzoic acid, benzaldehyde, sodium benzoate, salicylic acid, potassium and sodium salicylate, formaldehyde and fumaric acid. The facility discharges gallons per day of industrial wastewater.

This notice is being given to inform the public that NJDEP has prepared a draft NJPDES permit. This draft permit contains conditions necessary to implement the provisions of the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A-1 et seq.), which were promulgated pursuant to the authority of the New Jersey "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.), "Solid Waste Management Act" (N.J.S.A. 13:1E-1 et seq.) and the "Pretreatment Standards for Sewage" (N.J.S.A. 58:11-49 et seq.).

The draft permit prepared by NJDEP is based on the administrative record which is on file at the offices of the NJDEP, Division of Water Resources, located at 1474 Prospect Street in the Township of Ewing, Mercer County, New Jersey. It is available for inspection between 8:30 a.m. and 4:00 p.m., Monday through Friday.

Interested persons may submit written comments on the draft permit to the Assistant Director, Water Ouality Management, at the address cited above. All comments shall be submitted within 30 days of the date of this public notice. All persons, including applicants, who believe that any condition of this draft permit is inappropriate or that the Department's tentative decision to issue this draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the

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public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEP with respect to the permit application. At the close of the public comment period, the Department will issue or deny the permit. The Department will respond to all significant and timely comments when a final permit is issued. The applicant and each person who has submitted written comments will receive notice of NJDEP's final decision.

Any interested person may request in writing that NJDEP hold a non-adversarial public hearing on the draft permit. This request shall state the nature of the issues to be raised in the proposed hearing and shall be submitted within 30 days of the date of this public notice to the Assistant Director, Water Quality Management at the address cited above. A public hearing will be conducted whenever the NJDEP determines that there is a significant degree of public interest in the permit decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Dr. Marwan M. Sadat, P.E. Assistant Director Water Quality Management

WOM90-U/PN:fmm/lml



STATE OF NEW JERSEY JEPARI NT OF ENVIRONMENTAL PRO . ECTIO .. P.O. Box 1390

Trenton, N.J. 08625



PERMIT *

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments

Permit No. Issuance Da NJ0000124		te	Expiration Date		Date	
Name and Address of Applicant Tenneco Chemicals, Inc. P.O. Box 365 Piscataway, NJ 08854		Location of Activity Tenneco Chemica 290 River Drive Garfield, Berge New Jersey 0702	als, Inc. e - en County	Name and Address of Owner Same As Applicant		
Issuing Division		Type of Permit N.J. Pollutant	Discharge Elimi- (NJPDES) Permit	Statute(s) N.J.S.A 58:10A-	•	Application No.

Discharge industrial wastewater into Passaic Valley Sewerage Commissioners' facility in conformance to the effluent limits and monitoring requirements as stated in Part III Table I and subject to other conditions and requirements stated elsewhere in this permit.



Approved by the Department of Environmental Protection By Authority of: Arnold Schiffman, Director Division of Water Resources

Dr. Marwan M. Sadat, P.E. Assistant Director

Water Quality Management

The word permit means "approval, certification, etc."

Form DEP-CO7 7/80

DATE 3-17-81

To: Ton Leonard + File From: John Strong Subject: Tenneco Chemical, Garheld

Observations: At approx 4:05 pm a call was received from Mr. August Dege (Tech. Super.) for Tenneco Chemical. Mr. Dege wished to inform the Department that at approx 3:40 pm a cooling water pump failed which resulted in a ruptured duk serving then stripping column for the production of benzoic acid. The result of this ruptured disk was that approx. 1000 16s of Toluene was released to the atmosphere. At this time a team is installing a new disk in the stripping column and the toluene emission has ceased

En Spec.

April 13, 1981

N.J. Dept. of Environmental Protection Air Pollution Control Division 120 Route 156 Yardville, New Jersey 08620

REPORT NO. 81-4-10-7

Attention: Mr. Ostrander

Dear Sir:

Confirming our telephone report, this is to advise you that on April 6, 1981 at 9:10 a.m. there occurred an emission of Benzoic Acid dust into the atmosphere from the Tenneco plant at 290 River Drive, Garfield, N.J. 07026. It continued for about 5 minutes. It was caused by a gasket failure in the re-circulating piping of one of our stills, which allowed about 75 pounds of liquid Benzoic Acid to spill on the ground. It being a windy day, vapors from the hot materials condensed into a fine dust and were blown south and east over the adjacent neighborhood.

We were able to locate the leak and shut off the pipeline within a few minutes. The spilled acid was neutralized and washed to the sewer. The dust emission ceased as soon as the leak was stopped, and left no visible residue.

Very truly yours,

TENNECO CHEMICALS, INC. Organics Division

A. W. Dege

Technical Superintendent

AWD:pr

bcc: H. Goel

R. Glueck

R. Lareau

J. Mayer

J. Sandstedt

A: Walters



To: Tom Leonard

From: John Strong

Subject: Tennaco Chemicals Inc.

280 RIVER RD, GARTIELD

Date of Investigation: 6-12-81

Purpose of Investigation: Complaint Investigation- SEE AMARIES

Person(s) Interviewed: HARI GOET - Might Manufactoring - Tenneco

Observations: The undersioned met with Mr Goel and Discussed the attricked complaint. Per Mr Goel subject company had an accident with a discharge line where a broken gasket released Benzoic acid Qust. See Attriched letter from Tenneco Describing the accident. Letter Quited 6-11-81

Conclusion: The upset at Tenneco occurred around the time that the complaint was received. The undersigned atampted to contact the complaint but was unable to reach her. Complaint useified.

REcommendation: Company was informed to contact the NFO the next time that an upset occors. Company is planning to replace many of their old gaskets with a new design. This should eliminate this reconning problem.

J. Spec

290 River Road Garfield, N.J. 07026 (201) 646-4900



June 11, 1981

Mr. Bart F. Didovich, Director Civil Defense & Disaster Control City Hall Garfield, New Jersey 07026

Dear Mr. Didovich:

As you know, we had an emission of Benzoic Acid dust into the atmosphere yesterday from our Garfield facility. In accordance with your request, the following is a description of the incident:

At about 11:45 A.M. on June 10. 1981, we had a gasket failure in the discharge piping of one of our stills causing an emission of Benzoic Acid dust into the atmosphere. The leak was discovered immediately by the operator and the line was shutoff. The incident lasted for about 5 minutes.

Approximately 50 pounds of liquid Benzoic Acid was lost on the ground and a portion of the vapors from the hot material which condensed into a fine dust was blown eastward towards the adjacant neighborhood.

To minimize recurrence of this problem, we are planning to replace the present gaskets in this critical area with a new improved design gasket material during our annual shutdown this summer.

We trust that this explanation is satisfactory.

Very truly yours,

H. A. Goel-

TENNECO CHEMICALS, INC. Organics Division

Manager Mfg. Services

HAG:pr

cc: Mr. E. Burbank

Garfield Board of Health

bcc: A. W. Dege

R. Glueck

R. Lareau

J. Mayer

J. Sandstedt

Ion File

From John Strong

Dale: 6/27/04

Sobject: Equipment Operat at Kingar; Common

At approx 12117 pm Mr have Goe planter and it is the writers of a specifically specificable occurred in a set #36 involving the presence of some into a some of the control of some into a mozel in the constructions sembers survived as serviced as

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PHONE TAX TO THE

June 29, 1984

Mr. John Strong
N. J. Department of Environmental Protection
Bureau of Air Pollution Control
Newark Field Office
1100 Raymond Blvd.
Newark, N. J. 07102

Dear Mr. Strong:

Confirming our telephone report, I wish to advise you that on June 27, 1984 at about 2:00 a.m. we had an emission of Salicylic Acid powder into the atmosphere from our plant in Garfield, N. J. The emission lasted for about four hours and an estimated 30 lbs of Salicylic Acid powder was lost during this period. The problem occurred due to a plugged spray nozzle in the Salicylic Acid dryer scrubber system. The pluggage caused the Salicylic Acid powder to escape without getting scrubbed and removed from the exhaust system.

As you know, Salicylic Acid is not a hazardous substance but the dust can be irritating to eyes, nose and throat. The powder had blown over some of the neighbors' cars. We advised them to get their cars washed and were reimbursed for the same.

We are extremely sorry and regret the inconvenience it caused our neighbors. We are looking at this system and making every effort to avoid recurrence of this problem.

Very truly yours,

KALAMA CHEMICAL INC.

Technical Superintendent

HAG: pb



PHONE 201-779-8880 TWX 710-989-7001

April 30, 1986

RECEIVED

MAY 07 1986

Mr. Richard Perusse
N.J. Dept. of Environmental Protection
Division of Water Resources
2 Babcock Place
West Orange, NJ 07052

RE: Compliance Inspection - Kalama Chemical on 1/21/86 NJPDES No: NJ0000124

Dear Mr. Perusse:

This letter is in response to the letter of Mr. Thomas Harrington, Supervisor, Compliance Unit, on April 1, 1986 regarding the adverse findings at our Garfield facility during a compliance inspection on January 21, 1986.

We have instituted the following measures to correct the deficiencies noticed during the inspection:

- 1. Sulfuric Acid Hose Drippings: We are placing a bucket underneath the hose connection to catch any drips of Sulfuric Acid during the unloading operation from the tank truck to the storage tank. After the filling operation is complete, any residual amount of the acid in the hose is also drained into the bucket and disposed of properly.
- 2. Benzoic Acid Powder on the Ground: Small amount of Benzoic Acid noticed on the ground was the result of improper handling of the Molten Benzoic Acid fill line. The Molten acid solidifies immediately at ambient temperature. The shipping department, which handles loading operations, has been instructed to take precautions and follow the instructions below to prevent recurrence.
 - a. After the tank truck is loaded, the fill line should be lifted slowly and the material drained back in the truck. Purge the fill line before unhooking it.
 - b. If there is any inadvertent discharge of Molten Benzoic Acid on the ground, it should be swept up immediately and placed in a container for proper disposal.

The above measures are in place and are being followed by the shipping department.

3. <u>Benzoic Acid outside Bldg. 12</u>: The material noticed outside Bldg. 12 was not Benzoic Acid. It was Soda Ash from a broken bag. The spilled Soda Ash was collected and the area cleaned.

Mr. Richard Perusse
N.J. Dept. of Environmental Protection
April 30, 1986
Page Two

Please be assured we are taking all precautions to prevent incidents of non-compliance. We have recently embarked on a plan for improve house-keeping practices. We have a continuing policy of instructing our employees periodically on safe and proper handling and diposal of materials in the plant.

If you have any questions or need additional information, please contact me.

Very truly yours,

KALAMA CHEMICAL INC.

H. A. Goel

Technical Supt.

HAG: PB



File

State of New Aersen

DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES METRO BUREAU OF REGIONAL ENFORCEMENT 2 BABCOCK PLACE

JOHN W. GASTON JR., P.E. DIRECTOR WEST ORANGE, NEW JERSEY 07052

DIRK C. HOFMAN, P.E. DEPUTY DIRECTOR

April 1, 1986

Mr. Hari Goel, Technical Supervisor Kalama Chemical 290 River Drive Garfield, New Jersey 07026

Re: Compliance Evaluation Inspection Kalama Chemicals NJPDES No. NJ 0000124 Garfield/Bergen County

Dear Mr. Goel:

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on January 21, 1986. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "Unacceptable" due to the following deficiencies:

- The sulfuric storage tank filling operation has resulted in the discharge of sulfuric acid to the ground.
- 2. Benzoic acid powder was discharged to the ground at the truck loading rack and outside building 12.

Since these unpermitted discharges are contaminating the ground and surface waters of the State, Kalama Chemical is therefore directed to:

- 1. Immediately cease all unpermitted discharges to the surface and ground waters of the State.
- 2. Clean and properly dispose of all spilled and/or contaminated materials.
- 3. Implement an improved housekeeping plan to prevent future spillages and unpermitted discharges.

4. Submit a written report to this office within thirty (30) days of the receipt of this Directive detailing the corrective action taken.

Both the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-T et seq.) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.) provide for substantial monetary and criminal penalties in cases of permit violations.

Please direct all correspondence and inquiries to Richard Perusse the Compliance Investigator responsible for this case, who can be reached at (201) 669-3900 or by letter through this Division.

Failure to fully comply with the above will result in the initiation of enforcement action by this Department and/or the United States Environmental Protection Agency. This shall in no way be construed, however, to indicate any exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Very truly yours,

Thomas B. Harrington Supervisor Compliance Monitoring Unit Metro Bureau of Regional Enforcement

A27:G19

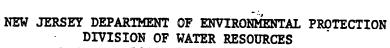
cc: Mr. John Theese, H.O.

Dr. Richard A. Baker, USEPA Mr. Paul Molinari, USEPA

bcc: Marianne Montgomery

Steven Madonna





P.O. Box 2809 Trenton, N.J. 08625 DISCHARGE SURVEILLANCE REPORT



	•
PERMIT #: NTOCOLL	4 NO. OF DISCHARGES: OO3 CLASS: MAT/IND
DISCHARGER: Kg/cma	
OWNER: Kalama	Chemicals
MUNIC: Gartiela	county: Borgon watershed code:
LOCATION: 290 Riv	ies Drive
RECEIVING WATERS: 10555	STREAM CLASS: TW-2
LIC. OPERATOR & PLANT CLAS	ss: Mr Jerold Mayer Plant Manager
TRAINEE/ASST: Mr. How G	nel, Tech. Super. OTHER INFO: 779-8880
MAJOR DEFICIENCIES NOTED:_	
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spilled on the gra	und outside building 12.
3) the sulfivie	storage tenk filling operation has
sesulted in The	lischerge of Sultwie aciel to the grand.
The coment fact	at the tonk filler neck had disintegrated
and a field test	of the fluid on the ground reverled a pHZI.
OVERALL RATING:	ceptableConditionally Acceptable
EVALUATOR: Richard Pe	S. 1500 TITLE: F +1/ / T 1.4
INFORMATION FURNISHED BY:	(name) Mr. Hersi Good
(title) Technical Schor	(name) Mr. Herri Gosel (organization) Kalama Chemical
The state of the s	raio ma Chemical
DATE OF INSPECTION: January	71 1601
of Indication.	7 01, 1100

WR-053-A



N.J.D.E.P. D.W.R. DISCHARGE SURVEILLANCE REPORT

REPORT

Page 2 of 3 (
Permit #: 17000/24

Date: Force 21 /986

1			EAMORIE PROGRESS PROGRESS
PA	TING CODES: S = Satisfacto	CLAL TR	EATMENT PROCESS EVALUATION
	TING CODES: 5 = Satisfacto	RATING	= Marginal U = Unsatisfactory NA = Not Applicable
+	DICCHARGE April 1/		COMMENTS
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1.,	WASTEWATER SOURCE(S)	 	24hr/day 7days/week
1 3	CONTINUITY OF OPERATION		24hr. Iday 7 days/week
GENERAL	BYPASSES/OVERFLOWS	NA	7.
Z	S.P.C.C. PLAN	7	1984
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NEW ERSE LEPARTMENT OF ENVIRONMENTAL PRECEDION DIVISION OF WATER RESOURCES CN 029, Trenton, N.J. 08629

DISCHARGE SURVEILLANCE REPORT

Page 3 of 3

Permit # <u>NTWOO124</u>
Date <u>January</u> 21, 198

PLANT DIAGRAM AND FLOW SEQUENCE:

Passaic River	> condensers > condensers > condensers > condensers storm water	001a >001b	Riss River
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KALAMA CHEMICAL INC.

290 RIVER DRIVE GARFIELD, N.J. 07026 PETERNED
BIVISION OF
WATER RESCURCES
ENFORCHINT ELEMENTE 201-779-8880
TWX 710-989-7001

Jun 15 2 23 PM '87

June 11, 1987

Ms. Maureen C. Coates
N. J. Department of Environmental Protection
Division of Water Resources
2 Babcock Place
West Orange, NJ 07052

RE: Compliance Evaluation Inspection April 8, 1987

Dear Ms. Coates:

This letter is in response to Mr. Thomas Harrington's letter of May 13, 1987 regarding the deficiencies found at our Garfield facility during a compliance inspection on April 8, 1987. In conformance with his request, we have taken the following actions with regard to each of the points contained in his letter.

- 1. The methanol spill occurred on April 6, 1987. An exhaustive investigation was conducted into the spill and a report issued on April 22, 1987, a copy of which is attached herewith. As stated in the report the spill was not reported to the NJDEP and EPA since methanol is not considered to be a hazardous substance under the NJDEP regulations and our initial estimate of the spilled material was less than 5,000 lbs which is a reportable quantity under CERCLA regulations. Once an accurate estimate of the spilled amount was made, this information was intimated to Mr. Frank Bland of Garfield Board of Health and Mr. Alan Layton of NJDEP regional office in West Orange, NJ.
- 2. We have one portable pump which is specifically meant for handling spills. This pump has now been fixed and checked periodically to keep it in good working condition. The other pump, which is normally used for routine maintenance activities, has also been repaired.
- As recommended in the spill investigation report, we have instituted several measures to correct the deficiencies. Specifically, we have taken the following steps to prevent recurrence of a similar incident.
 - (a) A written log is kept by the production department showing the amount of methanol on hand in the storage tank based on actual level reading of the tank and the usage.
 - (b) A procedure has been written for the bulk tank truck unloading of chemicals. Please find enclosed a copy of this procedure. This procedure is now being strictly followed by the production and shipping departments.

N' SET

Ms. Maureen C. Coates
N. J. Dept. of Environmental Protection
June 11, 1987
Page Two

(c) The SPCC plan is being updated and appropriate personnel involved in handling spills instructed to follow all state and federal regulations.

Please be assured we have taken certain specific steps and implemented a program which we feel will prevent such an incident from happening in the future.

If you need any additional information or have any questions, please contact me.

Very truly yours,

KALAMA CHEMICAL INC.

H. A. Goel Technical Supt.

HAG: PB Encl.

cc: Mr. Paul J. Molinary
Chief, Water Permits & Compliance
USEPA, Region II
26 Federal Plaza
New York, NY 10278

INTERNAL MEMORANDUM

TO:

J. M. Mayer

DATE:

April 22, 1987

FROM:

H. A. Goel

COPY TO:

J. L. Opgrande

W. H. Ostermiller

D. C. McNiel

A. Ramadan E. H. Khan

SUBJECT:

Methanol Spill from U/G Methanol Storage Tank

in Pit 33

This report covers the investigation of the spill of methanol from the underground methanol storage tank on 4/6/87. The investigation was conducted by D. McNiel and H. Goel.

SUMMARY

On Monday, April 6, 1987 at about 10:00 a.m. methanol overflowed from the underground storage tank in Pit 33 when a T/T of methanol was being off-loaded into it. Approximately 1,000 gallons of methanol is estimated to be spilled within the diked area of the pit. Attempts to recover the spilled material failed and none was recovered. The spill was not reported to the N.J. Dept. of Environmental Protection (NJDEP) since it is not listed as a hazardous substance under the NJDEP regulations and it was not reported to EPA hot line since our initial estimate of the spilled material was less than 5,000 lbs which is a reportable quantity. On Wednesday, April 8, 1987 the Garfield Board of Health inspector visited the plant at the request of NJDEP regional office who had received an anonymous call on the spill. Details on the incidents were provided to the Garfield Board of Health and the NJDEP regional office.

INCIDENT CLASSIFICATION

Date and Time of Incident:

Monday, April 6, 1987 at approximately 10:00 a.m.

Name and Clock No. of Unloader:

Ed Yakich 31137

Department Involved:

Methyl Salicylate

Equipment Involved:

Underground Methanol Storage

Tank in Pit 33

Operation Being Performed:

Off-Loading 6,902 gallons of

Methanol from a T/T into the

U/G Storage Tank

Mechanical Cause:

None

J. M. Mayer Re: Methanol Spill from U/G Methanol Storage Tank in Pit 33 April 22, 1987 Page 2

INCIDENT CLASSIFICATION (Cont'd.)

Human Causes:

- i) Level of U/G Storage Tank Not Measured or Measured Incorrectly Before Unloading T/T
- ii) Level of U/G Storage Tank Not Monitored During Loading Operation

None

None

Approximately 1,000 Gallons of Methanol

Injuries:

Equipment Damage:

Material Lost:

DETAILS OF INVESTIGATION

The spill investigation was conducted by:

Dave C. McNiel - Production Superintendent - Technical Superintendent Hari A. Goel

On Monday morning, April 6, 1987 at 7:30 a.m. Malcolm Smith, Methyl Salicylate operator, gaged the level of the U/G methanol tank in Pit 33. He reported the tank contained 44 inches or 5,000 gallons of methanol. This tank holds a maximum of 15,208 gallons of methanol. Based on this information, Ed Yakich was given permission to off-load a truck containing 6,902 gallons of methanol.

Ed Yakich began off-loading the truck at about 9:30 a.m. He did not gage the storage tank before starting the transfer. Methanol is off-loaded via a transfer pump located approximately 100' away from the storage tank. No monitoring of level rise in the tank was done during the transfer operation. At about 10:00 a.m. Ed Yakich noticed methanol coming out of the vent on the methanol tank. At which time he shut down the pump and notified supervision. The vent pipe is 2" diameter and 10° above ground level. He reported a maximum of 50 gallons spilled due to his quick actions. The truck driver confirmed this and indicated that approximately 2,500 gallons remained in the truck. Ed Yakich and the truck driver both were standing near the pumping station during the unloading operation. The methanol remaining in the truck was put into the methyl parasept methanol tank which is located underground on the southeast side of Bldg. 32. Ed Yakich was instructed to gage this tank before and after the transfer of the remaining methanol. He gaged the tank prior to but not after the transfer was complete. The tank showed it contained 41.5 inches or 5,055 gallons of methanol before the transfer.

Shortly after the spill occurred the area was cordonned off and closed to nonessential personnel. The spill was contained within the diked area of the methanol pit. The pit was estimated to be 12 feet by 25 feet and 4 feet deep. The pit is located in the yard and is open to the atmosphere. We had heavy rains on Sunday night, April 5 and also in the morning before the spill occurred. The level of the liquid was measured at several locations in the pit and it ranged J. M. Mayer

Re: Methanol Spill from U/G Methanol Storage Tank in Pit 33

April 22, 1987

Page 3

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DETAILS OF INVESTIGATION (Cont'd.)

from 2 to 4 inches. The spill was estimated at approximately 700 gallons or 4,600 lbs. The Shift Foreman, George Burks, was asked to take a sample of the spilled material. A sample was received in the lab presumably of the spilled material (the sample bottle was without a label or a cap). The lab analysis showed the material to contain 1.2% water, the rest methanol. On Wednesday, April 8, 1987 the pit was more accurately measured and the dimensions are 15 feet by 32.3 feet. This gives the spill amount to be 906 gallons on the average to a maximum of 1209 gallons if the maximum depth of 4 inches in the pit is used in the calculation.

Since the material was contained, it was decided to recover the material and clean up the pit by pumping it into 55 gallons steel drums. We employed a standby portable pump which is specifically meant for such purposes. The pump failed. We attempted to recover the material with another pump but that too failed. The Maintenance Department worked on both pumps the entire day before the pumps were fixed and ready to be used. Unfortunately when the pumps were tried to recover the spill, most of methanol had evaporated to the atmosphere and none could be recovered.

ESTIMATE OF METHANOL SPILLED

Since the storage tank level in Pit 33 was in error and that's why the spill occurred in the first place, we tried to estimate the spill from production records. We used earlier and presumably correct level readings of both methanol storage tanks taken on March 27, 1987. Based on actual usage and bulk methanol received since then, it was estimated we lost 900-1000 gallons of methanol.

ENVIRONMENTAL REPORTING & RESPONSE

Methanol is not considered to be a hazardous substance under the NJDEP regulations but it is reportable to EPA under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) if the discharge is 5,000 lbs or more. Since the spill was contained in a diked area and we planned to recover most of it and the fact that it was estimated to be below the reportable quantity, it was not reported to the NJDEP or EPA. Attempts to recover the spilled material failed and none was recovered as noted earlier.

On Wednesday, April 8, 1987 at approximately 11:00 a.m., Mr. Frank Bland of Garfiel Board of Health visited the plant. He was asked by the NJDEP regional office in West Orange, N.J. (Alan Layton - Air Pollution Control - 669-3948) to investigate the spill. Apparently an anonymous caller notified NJDEP on the spill. Details on the spill were given to Mr. Bland. He inspected the diked area where the spill had occurred. He said that he will turn in his report to the regional office and we will probably hear from the NJDEP water division. He advised us to call the regional NJDEP office on the spill. I called the regional office but Alan Layton was not available. After several tries, I finally was able to talk to him on Friday, April 10, 1987 at 3:20 p.m. I gave him the details of the spill and told

J. M. Mayer

Re: Methanol Spill from U/G Methanol Storage Tank in Pit 33

April 22, 1987

Page 4 .

ENVIRONMENTAL REPORTING & RESPONSE (Cont'd.)

him that we lost approximately 1,000 gallons of methanol-water mixture from this incident. He said that he is waiting to receive a report from Frank Bland of Garfield Board of Health. He also said that we don't need to inform the NJDEP enforcement office in Trenton, N.J. at this point. He further stated that he will call us on Monday, April 13, 1987 after discussing this matter with his supervisor.

On Monday, April 13 and again the following morning, I tried to contact him on this matter but he was unavailable. He finally called me back on Tuesday, April 14, 198 at about 11:15 a.m. and told me that since methanol is not a hazardous substance under N.J. air pollution regulations, he is going to refer this matter to the Water Division for their review and action. We have not heard from the Water Division so far.

CONCLUSIONS & RECOMMENDATIONS

From the information presented above, it is obvious that several procedural break-downsoccurred before, during and after the incident. The following conclusions are made:

- 1. The spill occurred because the storage tank was either not gaged or gaged incorrectly by the Methyl Salicylate operator before unloading the methanol truck. There was no cross-check available from production records to point out this error.
- 2. The unloader did not gage the storage tank before or during off-loading of methanol.
- 3. There is no written procedure on bulk loading/unloading operations in the plant which spells out checks to be made and functions of personnel involved before, during and after unloading operations are complete.
- 4. Even though the plant has a Spill Prevention Control & Countermeasure Plan (SPCC) to take care of such an incident, provisions of the plan were not adequately followed.

The following recommendations are made to prevent a recurrence:

- 1. A written log should be kept by the production department to show on a daily basis the amount of methanol which should be on hand based on methanol received and actual usage. This value should be confirmed with the level reading of the tank.
- 2. A procedure should be written and implemented for loading and unloading of all bulk materials in the plant. The procedure should include checks and cross-checks of tank levels, approval from the lab and production supervisi and responsibility of individuals involved before, during and after the loading/unloading operations are complete.
- 3. The SPCC Plan should be updated and applicable provisions followed to meet the state and federal regulations.

J. M. Mayer

Re: Methanol Spill from U/G Methanol Storage Tank in Pit 33

April 22, 1987

Page 5

I believe that these recommendations will significantly reduce the recurrence of such an incident in the future.

H. A. Goel

HAG: PB

17





State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WATER RESOURCES METRO BUREAU OF REGIONAL ENFORCEMENT

2 BABCOCK PLACE WEST ORANGE, NEW JERSEY 07052

GEORGE G. McCANN, P.E. DIRECTOR

DIRK C. HOFMAN, P.E. DEPUTY DIRECTOR

May 13, 1987

Mr. Hari Goel, Technical Superintendent Kalama Chemical, Incorporated 290 River Drive Garfield, NJ 07026

Re: Compliance Evaluation Inspection Kalama Chemical, Incorporated NJPDES No. NJ 0000124 Garfield/Bergen County

Dear Mr. Goel:

1

A Compliance Evaluation Inspection of your facility was conducted by representatives of this Division on April 8, 1987. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

1) On April 6, 1987, a spill of approximately 1000 gallons of methanol occurred at the Kalama Chemical facility.

Oral and written notification, as required by Page 4, Part I, Paragraph 6 of NJPDES Permit No. NJ 0000124, were not received by this office.

2) The facility's two (2) portable pumps for spill containment are not being properly maintained (out of order) in violation of NJPDES permit (Page 2, Part I, Paragraph 4e).

Since the deficiencies cited are presently, or could, in the future, adversely affect effluent quality, you are DIRECTED to institute measures to correct the deficiencies. A written report concerning specific details of remedial measures to be instituted, as well as an implementation timetable, must be submitted to this Department and USEPA, Permits Administration Branch, within thirty (30) calendar days of the date of this correspondence.

Both the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.) provide for substantial monetary and criminal penalties in cases of permit violations.

Please direct all correspondence and inquiries to Maureen C. Coates, the Environmental Specialist responsible for this case, who can be reached at (201) 669-3900 or by letter through this Division.

Failure to fully comply with the above will result in the initiation of enforcement action by this Department and/or the United States Environmental Protection Agency. This shall in no way be construed, however, to indicate any exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Very truly yours,

Thomas B. Harrington Supervisor, Compliance

Fromus B Lange

Monitoring Unit
Metro Bureau of
Regional Enforcement

E10:G25

cc: Dr. Richard A. Baker, USEPA

Mr. Paul Molinari, USEPA

Mr. John L. Welch, H.O.

Enclosure

bcc: Mohammed Z. Hussani, Enforcement Robert Candido, Criminal Justice



DEPARTMENT OF ENVIRONMEN DIVISION OF WATER RESOURCES

ECTION - Sie

INVESTIGATION MEMORANDUM

A LA COLOR
Persons Conducting Investigation Complaint No./NJPDES No. NJOCOO124
Maurein Coates Date of Investigation APRIL 8,1987
Routing TB4
Location of Incident Kalama Chemical
290 River Drive Garfield/Bergen
Purpose of Investigation
Spill of methanol
Persons interviewed Mr. Hari Goel (by phone)
Summary of Findings
In the process of filling an underground storage
tank from a tanker truck - due to an improper guaging
of the tank an overflow occurred. This tank is a four
foot high concrete Wall 13' x 25' surrounding the undergroun
tank area. Approximately 8+0" of crushed stone covers
the tank. Due to heavy rains prior to the spill there was
a lot of water in the dipled area - It is estimated our
that approximately 1000 gallons of methanol and water we're
in the dyle.
A portable pump was brought to the area in an
attempt to primp the methanol-water mixture to drims-however
the pump was broken. A second pump brought to the scene
was also broken. By the time a pump was available la
number of hours) the mixture had either evaporated or
the seeped then the stones to the ground.



State of New Aersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

CN 029 TRENTON, NEW JERSEY 08625

JOHN W. GASTON JR., P.E. DIRECTOR

DIRK C. HOFMAN, P.E. DEPUTY DIRECTOR

APR 2 4 1985

H.A. Goel, Technical Superintendent Kalama Chemical, Inc. 290 River Drive Garfield, New Jersey 07026

RE: Plan of Study - Temperature Requirements for TW-2 Waters Kalama Chemical, Inc., NJPDES No. NJ0000124

Dear Mr. Goel:

Your letter dated April 3, 1985 to Mr. Edward Post was submitted as the plan of study required by the compliance schedule (Part IV; C.) of your NJPDES permit. Following are our comments on your submittal:

- 1. Your NJPDES Permit, which became effective January 1, 1985 requires you to conduct a study within 18 months from the effective date (not later than June 30, 1986) which determines if the thermal component of your discharge is in compliance with Surface Water Quality Standards. If, at the end of the 18-month period, you are not able to demonstrate compliance, you will be expected to identify what level of thermal discharge loading, if any, will assure compliance with Surface Water Quality Standards. (You will be expected to attain compliance with that level which is identified, as in compliance with Surface Water Quality Standards, within three years from the Effective Date of the Permit.)
- 2. Your April 3, 1985 letter does not identify how the data collected is to be analyzed to determine compliance with Surface Water Quality Standards and/or to determine the thermal assimilative capacity of the receiving stream. Such information is vital to evaluating the adequacy of the Plan of Study.
- 3. Since the receiving water is tidal, the discharge may affect the temperature at the "upstream" location(s); therefore, the difference between "upstream" and "downstream" locations may not permit any valid conclusions about compliance with Surface Water Quality Standards.

- 4. It should be noted that vertical and lateral mixing of the discharge and receiving water may be very limited within the 900-foot length between the proposed "upstream" and "downstream" locations. Therefore, the Plan of Study will need to address the three dimensional nature of any thermal plume (or "mixing zone") which may be present.
- 5. New Jersey's Surface Water Quality Standards specify requirements for Zones of Passage. The Plan of Study should address demonstration of compliance with such requirements between your proposed "upstream" and "downstream" locations.
- 6. Please note that the Study should be designed so as to demonstrate compliance and/or thermal assimilative capacity at "critical" conditions. (For example, discharges are normally regulated so as to provide compliance with Surface Water Quality Standards at all flows at or above the minimum consecutive seven-day flow with a ten-year recurrence interval.)
- 7. We hope you will find the above comments helpful. Please note that the NJDEP will hold the permittee fully responsible to successfully complete the study.

Finally, we note that your letter indicates that you intend to talk to "outside consultants" to evaluate the adequacy of your Plan of Study. Please keep us aware of your progress and/or changes in your study plans.

If I can be of any further assistance, please feel free to call upon me at (609) 292-4860.

Richard R. Delgado

Project Specialist/Thermal Discharges Bureau of Industrial Waste Management

WQM14:tmc

CRUANTE & POLYMERS DIVISION

PC ACK LOG

290 River Rd- Garfield

PLANT I.D. 00053

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a		Deleted 1-26-82	
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4		wet Dust Collector STK Bldg 10-T	
5		Fumaric Acid Dryer Exhaust	
6	' 1	Fumaric Acial Reactor Vent- Bldg. 33	
٦		Deleted 1-26-PC N	PO
8	,	Methy Paracept Imp Mill : BD 10P.	
9		Sodium Salicylate vent	
10.	vi i	P.G.S. Reactor Vent	
11 5	, , , ,	Methyl Salicylate vac-Pump Vent	
12 *	3030	Raymond #10 IMP mill	
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14	,	Salicylic Acid Dryer Discharge	٠ ٢٥ -
15	, i	neutralizer Tank vents	. 1
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PLANT I.D. 00053

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34	31598	Head Cut receiver vent 6	1 &
35	31599	No.1 receiver vent no.7	C U tsu Are A ARO
36	31600	No.2 receiver vent no.8	Sike D
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40	47655	Truck & Drum Fill Vent FORMALDEHYDE	
41	32 <i>8</i> 33	MDA Hill Hoppen	
42	GF	Methanol Weigh Tank	
43		Deleted	
44	35398	Toluche Storage Tank #27	
45	35399	Toluene Storage Tank #28	
46	35400	Toluene Storage Tank #29	
47	35401	Toluene Storage Tank #30	
48	35391	Methanol Storage Tank NO.32-1	
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STACK NO.	CERTIFICATE NO.	DESCRIPTION OF EQUIPMENT	DATE LOGGED
49	35395	Methenol Storage Tank No 32-2	
50	35397	Methanol Storage Tank No. 32-3	
51	C.T.	Hexane-1 Tank No. 32-4	
<i>5</i> 2	-1. N	MIBK Tank No 32-5	·
53	35396	Methanol Storage Tank No. 33-2 U.G. Storage Pit Area	
54	35392	Methanol Storage Tank No. 33-3	
55	35393	Methanol Storage Tank No 33-4	
56	35394	Methanol Storage Tank No 33-5	
57	35390	Methanol Storage Tank NO 33-6	
58	G/F	PARAFORMALdEHYDE Scrubber - BLOG 12	
59	6/449	TANK CW-3	JUL 27 1982
60	61450	TANK CW-4	-NAL 55 55
61	61451	TANK CW-5	
62	614,52	TANK CW-7	July 15 75 2
63	61453	TANK CW-6	JUL 27 K L
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68	12)-	Tank 32-7 Aqueous Formaldehyde	
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75		Tank 31-1 Aqueous Formaldehyde	FEB 1 1982
76	. :	Tank 31-2 Aqueous Formaldehyde	FEB 1 1982
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KALAMA CHEMICAL INC.

THE BANK OF CALIFORNIA CENTER SEATTLE, WASHINGTON 98164

PHONE 206 - 682-7800 TWX 910-444-2294

December 17, 1982

Mr. William F. Hart
N. J. Department of Environmental Protection
Bureau of Air Pollution Control
CN-027
Trenton, New Jersey 08625

Dear Mr. Hart:

This letter is to inform you that effective December 9, 1982, the field, plant of Tenneco Chemicals, Inc. has been acquired by inc. has been acquired by inchange at hair permits currently in the name of Tenneco Chemicals with plant limition at 290 River Drive, Garfield, N. 12 07026.

As you requested during our telephone conversation last week, I am providing you the following information on all our air permits:

N. J. Stack No.	Certificate No.
1	42677
12	2030
13	40430
23	581
25	60937
27	4412
28	4412 4414
29	18328
30	
31	31594
32	31595
33	31596
34	31597
35	31598
36	31599
37	31600
38	31601
39	31602
40	31603
41	47655
41 44	32883
	35398
45	35399
46	35400
47	35401
48	. 35391
49	3539 5
50	35397



Mr. William F. Hart Page Two December 17, 1982

N. J. Stack No.	Certificate No.
53	3 5396
54	35392
55	35393
56	35394
57	, 353 90
59	61449
60	61450
61	61451
62	61452
63	61453
85	42184
87	42186
88	42187
89	42188
90	42189
91	42199
92	42190
93	47656
	47030

Stacks Nos. 2 through 11; 14 through 22; 42, 51, 52, 58, 64 through 69; 75 through 82 and 84 are covered under Grandfather clause.

Stack Nos. 24, 26, 43, 70, 71, 72, 73, 74, 83 and 86 have been cancelled and are open for future assignment, if needed.

Enclosed is a check for \$10.00 which covers the fee for the transfer of all air permits.

If you have any questions, please contact me at (201) 981-5957.

Very truly yours,

HAS.c

KALAMA CHEMICAL INC.

H. A. Goel

Technical Superintendent

HAG: pb Encl.

cc: Mr. John Strong, NJDEP J Newark, N. J.

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TO REDUCE DOMANT EMITTIONS

BERGEN COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENTAL PROTECTION

327 East Ridgewood Avenue, Paramus, N.J. 07652 201/646-2600



Michael A. Guarino, M.P.H. Director

May 28, 1981

Mr. Tom Leonard Office of Air Pollution 1100 Raymond Blvd. Room 510 Newark, N.J. 07102

Dear Mr. Leonard:

I have enclosed a copy of my report concerning the Tenneco complaint of May 13, 1981, as well as a copy of the letter from Mr. Dege, Technical Superintendent of Tenneco.

Regarding our phone conversation concerning a possible citation, (8.3E2); as you can see in the letter, the vent does not have a permit, whether this is a violation of the present New Jersey air pollution law would need your clarification.

If there is any other information you would need, please contact me.

Respectfully,

Anthony DeCandia

Environmental Specialist

ADeC:dmy (Encl.)

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AUTO REPORT		TIM	E	HOURS
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Signature a

Recall Date:



290 River Road Garfield, N.J. 07026 (201).646-4900 #3

May 14, 1981

Bergen County Dept. of Health and Environmental Protection 327 E. Ridgewood Avenue Paramus, New Jersey 07652

Attention: Mr. A. DeCandia

Dear Mr. DeCandia:

As you know, during your visit on May 13, 1981, a source of odor was located at Cambridge Avenue and Commerce Street, which may have been the reason for recent complaints to your office by a neighbor. Steam was coming from a roofline vent which would normally be condensed by a stream of river water in a contact scrubber. This steam comes from boiling off the Sodium Benzoate reactors. It contains trace amounts of the hydrocarbon biphenyl which although unreactive has a very strong unpleasant odor. I called the department foreman to investigate. He found that the scrubber water had stopped flowing due to a temporary blockage in the valve used to adjust water flow. When he opened the valve and cleared the plug, the steam from the vent stopped. As you know when we later checked on Commerce Street the odor had dissipated, and we concluded that the vent had been the probable cause.

Since we have had trouble with this river water throttling type valve blocking before, I have agreed to replace it with an open/shut type of valve sized to pass the correct amount of water. This should eliminate the possibility of accidental cut-off of the scrubber water, and avoid a recurrence of this odor problem.

Very truly yours, TENNECO CHEMICALS, INC. Organics Division

A. W. Dege

Technical Superintendent

AWD:pr

cc: Mr. E. Burbank Garfield Board of Health

P.S. Under present N.J.D.E.P. regulations, this vent does not require a permit. Biphenyl is not a volatile organic solvent as defined in Sub-Chapter XVI.

Rc



Jity of Garfield New Iersey

BOARD OF HEALTH

19 COMMERCE ST. GARFIELD, N. J. 07026 CITY HALL ANNEX Telephono 478-7040

October 11, 1978

Mr. Paul Arbesman, Director Division of Environmental Quality N.J. State Dept. of Environmental Protection Div. of Environmental Quality John Fitch Plaza P.O. Box 2807 Trenton, N.J. 08625

Dear Sir:

The Board of Health has asked me to write this letter in regards to chemical plants in Garfield. There are many pungent and noxious odors hovering throughout Garfield due to these plants. The Garfield Health Dept. is less than a block away from the Tenneco Chemical Plant and we believe they contribute greatly towards these odors. Very often all the windows in the Health Dept. must be closed because of these odors. A schoolhouse nearby must also shut their windows and they will testify to this fact.

I have read in the newspapers of your department having instruments to detect and measure pollutants in the air. I will be more than pleased to avail the facilities of the Garfield Health Dept. for your instruments. I will provide you with whatever assistance you may require and I am able to give in any survey for air pollution you conduct in Garfield.

Tenneco has informed me that they prevent their volatile chemicals from emanating into the atmosphere by holding a nitrogen gas in these tanks. These tanks contain a benzaldehyde compound. This is an aromatic chemical and the odors we detect at our Health Dept. are definately an aromatic.

We would appreciate any kind of testing you can perform in Garfield for the detection of any air pollutant. Once the pollutant is found then perhaps you can advise the violator on how best to abate these odors.

 R^7

Pac

The Board of Health and all the residents of Garfield would be deeply greatful of any steps you take to alleviate these odors. I hope to hear from you soon.

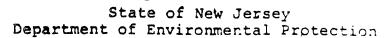
Sincerely yours,

Shu Killind John Vertino Health Officer

JV/jr

RE

MEMORANDUM



TO: Byron Sullivan

FROM: R. Jaggi

DATE: February 25, 1077

SUBJECT:

Tenneco Chemical

River Road, Garfield

Date of Investigation - 2-17-77 3:00 p.m. - 3:45 p.m.

Purpose of Investigation - Complaint Evaluation

Persons Interviewed - Mr. & Mrs. Arthur Makowski 51 Commerce Street, Garfield

Investigation:

The Makowski's were interviewed and they stated that they have lived at the site for about two years. At times they have noticed odors in the area which they believe are emanating from the subject company. Mr. Makowski notices the odors mostly at 5:00 p.m. and later, when he returns from work. Mrs. Makowski notices odors throughout the day. They described odor(s) as being a winter green type.

The Makowski's were advised of the provisions of Subchapter 5 and the Bureau procedures with regard to complaints, verification, etc. Mr. Makowski said that he plans to again talk to his neighbors regarding the situation. He said the odor(s) will now be more noticeable with the coming of warmer weather.

An effects survey was conducted in the area of the subject plant. Unidentified odors were detected downwind of the plant along Hudson Street and Cambridge Avenue. Weather, mostly clear. Wind, from NW* @ 20 mph* (* - Variable). Distance to plant, 25 feet to 250 feet.

Conclusion

The complaint was not verified in that odors were not detected at the complainants home nor at a distance* from the subject plant which would be detected at the complainants home. However, odors were detected and possibly with particular wind and weather conditions, these odors would be detected at the complainants home.

* Approx. 750 Feet



Recommendation:

File report. Audit future complaints. Copy of report to Subchapter 8 file.

Addendum

Mr. Dege at the subject company was telephoned and advised of the complaint and that odors were detected downwind of the plant off Company property.

R. Jaggi

MEMORANDUM

State of New Jersey Department of Environmental Protection

TO: Byron Sullivan

FROM: Marvin Makler

DATE: January 20, 1977

SUBJECT:

Odor Complaint Tenneco Chemicals

290 River Road, Garfield

Date of Investigation: January 12, 1977

Persons Interviewed: Joanne Kurr, Employee

Neighborhood Youth Center 11 Commerce Street, Garfield

Douglas E. Jacobsen, Production Sunt.

Tenneco Chemicals

Investigation:

Ms. Kurr stated that upon arrival at work at the Neighborhood Youth Center at 9:00 a.m. of January 12, 1977, she detected a horrible odor coming from Tenneco. This odor, she said, lasted for approximately one hour. The Center is located approximately 400 feet directly east of Tenneco. The wind direction at the time of the interview was west at 10-15 mph.

Mr. Jacobsen indicated that the company had experienced some problems which caused an odor emission. He described it as follows:

A distillation process containing Benzoic Acid became contaminated with "Dowtherm A" after a leak had developed in the jacket of the still pot. The contaminated product was then transferred to a reaction vessel for boil down. As the product temperature rose, the "Dowtherm A" vaporized to atmosphere, causing the release of odors. At approximately 9:00 a.m., people called the company complaining of odors. At this point the boiling reactor was shut down and the odors subsided.

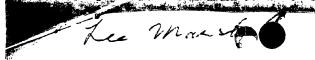
Conclusion:

Since no odors were detected in the vicinity of the Neighborhood Youth Center by the undersigned, it appears that the action taken by the company resolved the odor problem

Recommendation:

File report.

Maron P. make







City of Garfield

New Icrosp

07026

CHY EAST 478-1844

May 10, 1972

Air Pollution Control 25 Route 22 Springfield, New Jersey

Attention: William Hart, Senior Environmental Engineer

Dear Mr. Hart:

Confirming our telephone conversation of yesterday, please be advised that Monday night at the City Hall, a conference was held with the Mayor and City Council, Heyden Chemical Corporation and residents in the area of the plant.

The main contention was the noise, vibration, smog and vapor eminating from the new Benzaldehyde operation.

The neighbors present would like to have you speak to them personally concerning these problems. Please advise me when you will be available for a conference so that notices can be sent to them and the City Officials.

The Mayor and Council also request a written report of the inspection that was made at Heyden Chemical last fall or early this spring.

Please except our sincere thanks for your cooperation in this matter.

Very truly yours,

Vaclow Dombal

CITY CLERK

VD:etk

cc: Mayor Visotcky, Councilmen Mucha, Reno, Benanti James Lusciandriello



State of New Jersey DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, P. O. BOX 2807, TRENTON, N. J. 08625

ORDER

To: Tenneco Inc.
Corporation Trust Co., Registered
Agent
28 West State Street
Trenton, New Jersey 08608

Re: N.J.A.C. 7:27- 8.3(e) 2
Plant identification No. 50053
Violation Occured on Premises
Known As:
290 River Drive, Block 50, Lot 1,
Garfield City, Bergen County,
New Jersey

Herbert Wortreich, Chief

Bureau of Air Pollution Control

WHEREAS, the State Department of Environmental Protection has determined by investigation(s) or inspection(s) made pursuant to the Provisions of the New Jersey Air Pollution Control Act that on	
you did violate Title 7, Chapter 27, Subchapter 8 , Section 8.3(e) 2 , of the New Jersey Administrative Code.	

The investigation(s) discloses the use of the tank truck formalin filling and vent system without all components in use of functioning properly in accordance with Permit P-31604 and Certificate CT-31604 on the premises identified above.

NOW, THEREFORE, YOU ARE HEREBY ORDERED, to cease violation of said Subchapter on the premises owned, leased, operated or maintained by you on or before <u>December 15, 1977</u>.

Dated: November 30, 1977

Garfield City

Field Office Newark

CERTIFIED MAIL

cc: Local District

VAP001 Jul. 76

DATE 9-6-77 TIME AT SITE 1200 a.m. 1350 a.m. p.m. Isto p	- 6
MAILING ADDRESS 290 River Drive Garfield C702 No. Street Post Office Zip Code TYPE OF OWNERSHIP: NAME OF OWNER, PARTNERS, OFFICIALS TITLE INDIVIDUAL PARTNERSHIP Raymond Marks Fres CORPORATION	- 6
TYPE OF OWNERSHIP: INDIVIDUAL PARTNERSHIP CORPORATION MUNICIPAL (type)	
PARTNERSHIP Raymond Marks Pres CORPORATION	
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ZZ PERSONS INTERVIEWED Thomas J. Lo Bue Works Mgr.	
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Sec. C CODE REFERENCE 7 Chapter(s) 27 Section(s) 8.3 Paragraph(s)	
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State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, P. O. BOX 2807, TRENTON, N. J. 08625

ORDER

То:	Tenneco Chemicals, Inc.							
	Corporation Trust Co., Registered Agent							
	28 West State Street							
	Trenton, New Jersey 08608							

Re: N.J.A.C. 7:27. 3.2 (a)
Plant Identification No. 00053
Violation Occurred on Premises
Known As:
290 River Road, Plate 3, Lot 1,
Block 50, Garfield City, Bergen
County, New Jersey

WHEREAS, the State Department of Environmental Protection pursuant to the Provisions of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementations of the New Jersey Air Pollution Continuous vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 7. Chapter 27. Supplementation vou did violate Title 27. Chapter 27. Supplementation vou did violate Title 27. Chapter 27. Supplementation vou did violate Title 27. Chapter 27. Supplementation	on has determined by investigation(s) or inspection(s) made trol Act that onApril 9, 1979
you did violate Title 7, Chapter 27, Subcithe New Jersey Administrative Code.	hapter3_, Section, of
The investigation(s) discloses visible smoke bein from the combustion of fuel in the premises identified above.	ng emitted into the ouddoor air e Strathers Wells boiler on the
	-
NOW, THEREFORE, YOU ARE HEREBY ORDERED, to cease operated or maintained by you on or before	violation of said Subchapter on the premises owned, leased,
Dated: June 13, 1979	Edward I Lunden
cc: Local District Garfield City Field Office Newark	Edward J./ Hondres Assistant Chief Bureau of Air Pollution Control
CERTIFIED MAIL	•

VAP001 Jul. 76 54

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Distance to Base of Stack 200 ft. Height of Stack 70 ft. Wind Direction South Ost Wind Velocity 4-6 m ph.	
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Declarated 4	
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Numbers in the left hand column represent emission densities equivalent to Ringelmann's Scale for Grading the Density of Smoke published by the U. S. Bureau of Mines (Rn), and equivalent opacities in % of total obscuration. Numbers across the chart define the hour of the day and minutes during which observations were made.

The shaded horizontal traces are the grades of Ringelmann's Scale or equivalent opacities and the duration of that grade of emissions during the period of observation. Vertical traces have been inserted only to provide a clearer graphical illustration of the variations of emissions.





State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY JOHN FITCH PLAZA, CN027, TRENTON, N.J. 08625

ORDER

TO: Kalama Chemicals, Inc.
Bob Kirshner, President
280 River Road
Garfield, New Jersey 07026

RE: N.J.A.C. 7:27-16.6(d)
Plant ID # Not listed
Violation Occurred on
Premises Known As:

280 River Road, Garfield City, Lot 1, Block 50, Bergen County, New Jersey

WHEREAS, the State Department of Environmental Protection has determined by investigation(s) made pursuant to the Provisions of the New Jersey Air Pollution Control Act that on December 14, 1982 you did violate Title 7, Chapter 27, Subchapter 16, Section 16.6(d), of the New Jersey Administrative Code.

The investigation(s) disclosed that you did cause, suffer, allow or permit VOS (toluene & water) to be emitted into the outdoor atmosphere from a leaking condenser/sight glass fitting connection.

NOW, THEREFORE, YOU ARE HEREBY ORDERED to cease violation(s) of said Subchapter on the premises owned, leased, operated or maintained by you on or before January 13, 1983.

DATED December 29, 1982

Thomas A. Pluta, Assistant Di

Enforcement Branch

cc: Newark Field Office u

L09#20111

CERTIFIED MAIL

NEVERL

DEPARTMENT OF ENVIRONMENTAL PRODIVISION OF ENVIRONMENTAL QUALITY

AIR POLLUTION CONTROL CODE

FIELD RECORD OF VIOLATION

DAT	E 12-14-82 TIME AT SITE 9:45 (am.) 12:30 (am.) 12:30 (pm.) 100053
STAT	TE HEALTH DISTRICT NEWARK COUNTY BETGER
Sec. A	FULL BUSINESS NAME KA A MA Chemical Inc (Formally Tennece Chemical Inc MAILING ADDRESS 280 River R.Q GARTYELQ 07026 TYPE OF OWNERSHIP: Individual Partnership Corporation Municipal Type NAME OF OWNER, PARTNERS, OFFICIALS BOD KIRCHNER
PERSON IN VIOLATION	PERSONS INTERVIEWED HAMNY GOED PERSON AUTHORIZED TO RECEIVE PROCESSES HAMNY GOED MAILING ADDRESS ARO RWEN RQ GARTYELQ 07026 REMARKS:
LOCATION OF SO VIOLATION W	LOCATION ADDRESS 280 RWEN RQ GARTIELQ (Show details on reverse side) Book Plate Lot Block 50 PREMISES OCCUPIED AS: Q Owner Lessee Tenant OWNER KALAMA Chemical Inc 280 RWEN RQ GARTIELQ City City
DETAILS OF SS SS VIOLATION C	CODE REFERENCE: Chapter(s) N.J.A.C. 7:27 Section(s) 16.6 Paragraph(s) (Q) DETAILS The investigation Quicloses that a visible liquid VOS LEAK (Toluene + whater) was observed coming from a condenser sight glass fitting connection. which does not involve any maximal parts. Above leak and equipment are located in RDG. 10-M, Fourth Floor. Company aformed that a violation would be written REMARKS Strong solvent olong Peterted in the area for ma
	Goel the least had been Fixed before in the past Leak was quite abusous RECOMMENDED ACTION ISSUE ONDER

(OVER) OK GOOD

NAJING OF OPERATION (Check one that applies)

		a. Agriculture (Includes farming, fishing, forestry)					g. Utilities							
		b. Mining					h. Business and Personal Services (Includes Banks, Real							
		. Construction Estate Co., Insurance Co., Hotels, Recreational Service Movies									ervices i			
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State of New Jersen

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY JOHN FITCH PLAZA, CN027, TRENTON, N.J. 08625

ORDER

TO: Kalama Chemicals, Inc. Bob Kirchner, President 280 River Road Garfield, New Jersey 07026

RE: N.J.A.C. 7:27-8.3(e)2 Plant ID # Not listed Violation Occurred on Premises Known As:

280 River Road, Garfield City. . Lot 1, Block 50, Bergen County, New Jersey

WHEREAS, the State Department of Environmental Protection has determined by investigation(s) made pursuant to the Provisions of the New Jersey Air Pollution Control Act that on December 14, 1982 you did violate Title 7, Chapter 27, Subchapter 8, Section 8.3(e)2, of the New Jersey Administrative Code.

The investigation(s) disclosed the use of the process equipment without coolant flowing through condenser, therefore not functioning properly in accordance with Permit (P-60937) and Certificate (CT-60937).

NOW, THEREFORE, YOU ARE HEREBY ORDERED, to cease violation(s) of said Subchapter on the premises owned, leased, operated or maintained by you on or before January 13, 1983.

December 29, 1982 DATED

cc: Newark Field Office

Enforcement Branch

4-09 #20110

CERTIFIED MAIL



DEPARTMENT OF ENVIRONMENTAL PRODIVISION OF ENVIRONMENTAL QUALITY

AIR POLLUTION CONTROL CODE

	FIELD RECORD OF VIOLATION I.D. 00053							
DAT	TIME AT SITE 9:45 (a.m.) 12:30 (p.m.)							
STA	E HEALTH DISTRICT NEWANK COUNTY BETAEN							
Sec.	FULL BUSINESS NAME KALAMA CHEMICAL INC. (FORMALLY TENNECO CHEMICAL INC.)							
	MAILING ADDRESS 380 RIVER RD GARTIELD 07026 No. Street City Zip Code							
	TYPE OF OWNERSHIP: Individual Partnership Corporation Municipal							
	NAME OF OWNER, PARTNERS, OFFICIALS Bob Kirchner							
PERSON IN	TITLE Presi De At							
ERSC	PERSONS INTERVIEWED HARRY GOED							
->	PERSON AUTHORIZED TO RECEIVE PROCESSES HALLY GOS							
	MAILING ADDRESS 280 RIVER & GANTIEL 07026							
	REMARKS: Zip Code							
	000							
Sec. E	LOCATION ADDRESS 280 River RD GARTIELS							
LOCATION OF VIOLATION	(Show details on reverse side) Book Plate Lot Block PREMISES OCCUPIED AS:							
Sec. C	CODE REFERENCE: Chapter(s) N. J. A. C. 7:27 Section(s) 8.3 Paragraph(s) (e) 2							
	DETAILS The investigation Queloses that subject company was noterat-							
	11 - 10 portal and control apparetus covered by Temp. Permit # 60937							
	15/25 not in accompance with fermit by having no coolent Floring							
ĽZ.	through condenser. Equipment consists of still reactor; Hold trank							
ILS O	PECELUER, ENGIANIZER, mother lyon TANK All which uset to a							
DETAILS OF VIOLATION	Flowing through condenser. Solvent still and receiver were							
٥>	REMARKS in operation. Company wormed violation would be written.							
	VERY, VERY little water (deoplets) detected on Discharge side of condenser							
	rermit states 50 6.P.M							
	RECOMMENDED ACTION							
1	200-77							

SIGNED:

TITLE:

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NAJAL OF OPERATION (Check one that applies)

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DEQ-062 1/88

NEW JESSEY DEPARTMENT OF ENVIRONMENTAL PRODUCTION OF ENVIRONMENTAL QUALITY BUREAU OF ENFORCEMENT OPERATIONS

NTAL PROTECT	ION
UALTIY	

PLANT	INSPECTOR
ID #	ASSIGNED
110053	12-1

FIELD INVESTIGATION ASSIGNMENT REPORT

DATE ASSIGNED	DATE DUE
64-11-58	11.88
DATE COMPLETED	COUNTY
6-15-88	Flin

1/ 2	COMPLETED COUNTY
COMPANY NAME KALAMA CHEMICAL INC.	TYPE OF ASSIGNMENT CYCLE
CDS CLASS: A1 VO3 A2 B NSPS NESHAPS PSD	
AIR GRANT (105):	VO Other
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SEE ATTACHED FOR ADDITIONAL INFORMATION: YES NO	SUPERVISOR'S DEVIEW INITIALS DATE: 6-20-08

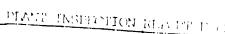
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Company Name Kalgung Chemical Tions Location 290 River Rd		
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Date of Inspection 6/1 & 6/15 Time 9:00	n bachell	M
Person(s) Interviewed Hari Goel	XR - 7 / /	<u> </u>
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PLANT INSPECTION REPORT FORMS

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Additional comments	and Recommendatio	ns	. 1	

PRELIMINARY INVESTIGATION OF SOIL QUALITY CONDITIONS AT THE KALAMA CHEMICAL, INC. FACILITY IN GARFIELD, NEW JERSEY

December 1986

Geraghty & Miller, Inc. 7 Atlantic Street Hackensack, New Jersey 07601 GERAGHTY & MILLER, INC.

PRELIMINARY INVESTIGATION OF SOIL QUALITY
CONDITIONS AT THE KALAMA CHEMICAL, INC.
FACILITY IN GARFIELD, NEW JERSEY

INTRODUCTION

In June 1986, Geraghty & Miller, Inc. was retained by Kalama Chemical, Inc. to conduct a preliminary soil sampling and analysis program at the Kalama Chemical, Inc. facility in Garfield, New Jersey. The purpose of this preliminary investigation was to assess soil quality conditions as a result of past plant activities.

Background

The Kalama Chemical, Inc. facility has been the site of chemical manufacture for at least 80 years. Kalama Chemical, Inc. bought the facility in 1982; prior to that time, the facility was operated by several previous owners. Several organic chemicals have been manufactured at the facility; current production is greatly reduced from what was normal under previous ownership.

Scope of Work

The program consisted of the drilling of five (5) soil borings from land surface to the top of the water table or a maximum depth of twelve (12) feet, and the collection of soil samples for chemical analysis. The investigation was focused on areas where chemicals were

transferred to or stored in underground tanks, or where spills may have occurred in the past. One sample was submitted for analysis from each boring; the individual samples were analyzed for parameters that would reflect materials handled at each location.

In addition, one fluid sample was collected from the subsurface at the location of Boring B-4. Boring B-4 is located in the benzaldehyde production area.

FIELD PROGRAM

Soil Sampling

On June 25, 1986, five soil borings were drilled by Environmental Drilling, Inc. of Mt. Arlington, New Jersey, under the supervision of a Geraghty & Miller, Inc. scientist and Mr. Hari Goel, Technical Superintendant at the Kalama Chemical, Inc. facility. The location of the boreholes are shown on Figure 1. The soil sampling locations were selected in accordance with the following criteria:

- o Borings located a safe distance from potential dangers such as buried utility lines and pipes. These utilities were delineated by plant personnel.
- o Completion of as many borings as possible in one day of field work.
- o Borings located where spills, chemical transfer or storage took place, and where the potential for past spills exists.

The rationale for the selection of boring locations was as follows:

<u>B-1</u>: This area has been used as a shipping/transfer area for chemicals.

<u>B-2</u>: Underground storage tanks containing methanol and fuel oil are located in this area.

B-3: This location has been used for loading and unloading chemicals, primarily formaldehyde, from and to rail cars.

<u>B-4</u>: Benzaldehyde production area.

B-5: Chemical transfer area, primarily formaldehyde.

The borings were drilled with a hollow stem auger rig, to depths of 8 to 12 feet below ground surface, in order to obtain samples of the geologic materials in the unsaturated zone, above the water table. Soil samples were collected continuously in two-feet intervals with split-spoon samplers. Prior to drilling and sampling at each boring location, the auger flytes and split-spoons were decontaminated in order to prevent cross-contamination between borings.

At each boring, the soil samples were described by the Geraghty & Miller, Inc. hydrogeologist, and screened with a portable organic vapor analyzer (OVA) meter. The geologic boring logs are presented in Appendix A. The samples with the greatest indications of potential contamination were transferred to 40 ml vials and 120 ml jars for analysis; the soil samples were delivered to General Testing Corporation of Hackensack, New Jersey. All of the soil samples were analyzed for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPHC). At locations where certain chemicals were known to be stored, transported, or used, additional parameters were selected for analysis.

In addition, a fluid sample was collected at Boring B-4, as water was encountered at a relatively shallow depth (2.5 feet below land surface). The fluid sample was transferred to a 40 ml. vial, and submitted for a VOC analysis.

At the completion of sampling at each boring location, the holes were backfilled and sealed with bentonits.

Analytical Results

The results of the analysis of the soil and fluid samples are summarized in Tables 1, 2, and 3; the complete laboratory reports are presented in Appendix B. The results indicate the presence of a variety of base/neutral extractable organic compounds at location B-2. Toluene was detected in all soil samples and the fluid sample from Boring B-4. The soil and fluid samples from Boring B-4 had toluene concentrations of approximately 0.2 percent and 0.5 percent, respectively. Phenol (at a concentration of 19.8 ppm) was detected in the soil sample from Boring B-5.

Respectfully Submitted,

GERACHIY & MILLER, INC.

buy 2. Meilyten

Jeffrey T. Melby,

Scientist

Daniel A. Nachman Senior Scientist

Vincent W. Uhl, Jr.

Associate

APPENDIX A

Geologic Logs

APPENDIX A

Geologic Logs of Soil Borings at Kalama Chemical, Inc., Garfield, New Jersey, June 25, 1986.

Bore Hole No.	Description	Depth (ft)
1	Fill, silt, asphalt, and clay, brown, and red. Dry.	0 - 0.5
	Fill, silt, asphalt, and clay, black. Dry.	0.5 - 2
	Silt, clay, and fine sand, brown. Dry.	2 - 4
	Sand, medium to coarse, with some fine gravel. Dry.	4 - 10
2	Silt, fine sand, and fine gravel, brown. Dry.	0 - 2
	Silt, sand, fine gravel, with some clay, dark brown. Dry.	2 - 4
	Sand, medium to coarse. (OVA=3 ppm)* Dry to moist.	4 - 6
	Silt, sand, fine gravel, with some red streaks of silt, clay, and fine sand, moist, black. (OVA-200-300 ppm). Watercountered at approximately 9 feet	er
	below land surface.	6 - 10
	Silt with fine gravel, loose, wet.	10 - 11
	Sand, very fine, with silt and some clay, moist. (OVA = 70 ppm). Wet.	11 - 12
3	Silt, fine sand, fine gravel, black. (OVA = 100 ppm). Dry.	0 - 2
	Sand, fine to medium, fine gravel, cinders?, black and gray. (OVA=85 ppm). Dry.	2 - 3.5
	Silt and clay, dark brown to black.	3.5 - 4
	Sand, medium to coarse, brown. (OVA = >100 ppm). Dry.	4 - 6

^{*} OVA readings are relative, and are approximately reflective of relative concentrations of benzene.

APPENDIX A

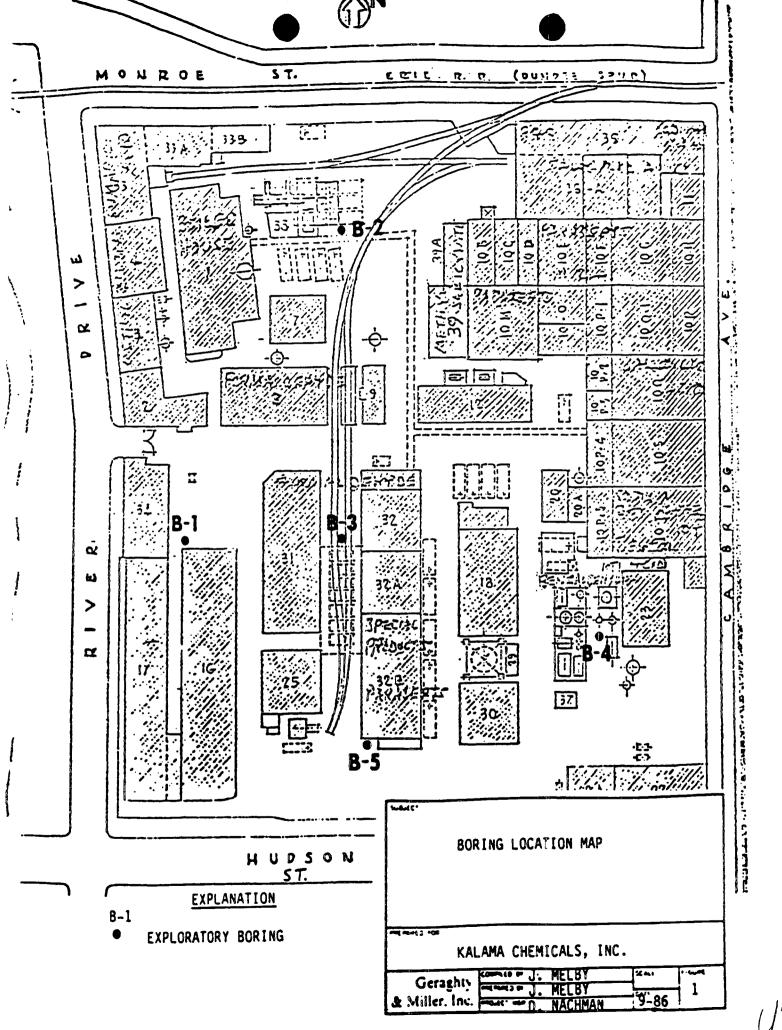
Geologic Logs of Soil Borings at Kalama Chemical, Inc., Garfield, New Jersey, June 25, 1986.

Bore Hole No.	Description	Dep	th	(ft)
3 Contid.	Sand, medium to coarse, brown with lens of red medium sand. (CVA=200 ppm). Moist.	6	-	8
	Sand, coarse, with fine gravel, black and white, with lens of red sand. (OVA = 200-300 ppm). Moist.	8	-	10
	Sand, coarse, black and white. (OVA=800 ppm). Moist.	10	-	11
	Sand, coarse, with some silt, black.	11	-	12
4	Fill, silt, sand, ash ?, brown and gray. (OVA=>1000 ppm). Moist.	0	•	2
	Sand, coarse, with fine to medium gravel fill. Water encountered at 2.5 feet *below land surface. (OVA=>1000 ppm).	. 2	-	4
	Sand, fine to medium, wet. (OVA=>1000 ppm).	4	-	6
	Silt, loose, with some fine sand, black. (OVA=>1000 ppm). Wet.	6	•	8
5	No recovery.	0	-	2
	Fill, asphalt, cinders? with some silt, fine sand, black. (OVA=100 ppm at 4 ft, OVA=700 ppm at 6 feet). Water encounter at 4.5 feet.	,	-	6
	Clay, with some silt, brown. (OVA=600 ppm). Wet.	6	-	8

^{*} OVA readings are relative, and are approximately reflective of relative concentrations of benzene.

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GERAGHTY & MILLER, INC.

Table 1: Concentrations of Miscellaneous Parameters in Soil Samples

	B-1	B-2	B-3	B-4	B-5*
Total Petroleum Hydrocarbons	<47.9	<40.9	1070	236	100
Benzoic Acid				<100	
Benzaldehyde			< 200	<200	
Formaldehyde			< 100		< 100
Total Phenolics			9.	6	9.3
Alcohols		<100			< 100

Notes:

Blank = not analyzed * Composite sample. All concentrations in ppm. Analysis performed by General Testing Corporation of Hackensack, NJ.

Table 2: Concentrations of Organic Compounds in Soil Samples

	B-1	B-2	B-3	B-4	B-5			
Volatile Organic Compounds								
Benzene Toluene Ethylbenzene Methylene Chloride 1,1,1-Trichloroethane Dibromochloromethane Bromoform	ND 0.0097 ND ND 0.0036 0.011 0.035	ND 0.011 ND ND 0.017 ND ND	ND C.116 ND ND O.020 ND ND	15.0 2470.0 ND 15.0 ND ND	0.066 0.730 0.0042 ND ND ND			
1,1,2,2-Tetrachloroethane	ИD	ND	ND	4.40	ND			
Acid Extractable Organic Compounds B-1 B-2 B-3 B-4 B-5								
Phenol		0.0941	0.232	0.34	1 19.800			

Base/Neutral Extractable Organic Compounds

	B-1	B-2	B-3	B-4	<u>B</u> −5
Anthracene		0.0979	ND	ND	ND
Benzo (a) anthracene		0.743	ND	BMDL	ND
Benzo (a) pyrene		0.459	ND	0.129	ND
Benzo (b) fluoroanthene		0.836	ND	ND	ИD
Benzo (ghi) perylene		0.322	ND	ND	ND
Benzo (k) fluoranthene		ND	ND	0.422	ND
bis (2-Ethylhexyl) phthalate		0.654	ND	ND	1.30
Butyl benzyl phthalate		ND	ND	BMDL	HMDL
Chrysene		0.377	ND	0.299	ND
Di-n-butyl phthalate		BMDL	BMDL	0.408	BMDL
Fluoranthene		1.16	BMDL	1.90	ND
Fluorene		ND	ND	0.600	0.379
Indeno (1,2,3-c,d) pyrene		0.195	ND	ND	ND
Napthalene		ND	ND		
Phenanthrene				.0706	ND
Pyrene		0.582	BMDL	2.35	BMDL
LArene		1.11	ND	1.28	0.118

Notes:

ND = Not detected.

Blank = Not analyzed.

Concentrations in ppm.

Volatile organic analyses performed by General Testing Corporation of Hackensack, NJ.

Acid extractable and Base/Neutral Extractable Organic Analysis ETC of Edison, NJ.

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GERAGHTY & MILLER, INC.

Table 3: Concentrations of Volatile Organic Compounds in Water Sample from Boring B-4

Volatile Organic Compound

Methylene Chloride12.000Benzene68.000Toluene5,400.000

Notes:

Concentrations in ppm.

Analysis performed by General Testing Corporation of Hackensack, NJ.

0000124-4,B



PHONE 201 779 8880 TWX 710 989-7001

March 5, 1987



DEPT. ENVIRON. PROTECTION Division Water Resources Bureau of Permits Admin.

Mr. George Caporale
Dept. of Environmental Protection
Water Quality Management
Bureau of Permits Administration
CN 029
Trenton, NJ 08652

Dear Mr. Caporale:

In response to your letter of January 22, 1987, we wish to inform you that Kalama Chemical's Garfield, NJ facility comes under the definition of a "small business". We have approximately 75 full and part time employees and it is a privately owned corporation. We manufacture organic chemicals such as Salicylic Acid and Methyl Salicylate. We also produce Parasepts which are used in food and pharmaceutical industries as preservatives and stabilizers. As far as we know there is no single dominant source of these chemicals. Besides Kalama Chemical, there are other companies who manufacture these chemicals.

If you need any additional information, please contact me.

Very truly yours.

KALAMA CHEMICAL INC.

H. A. Goel Technical Supt.

HAG: PB

CN 028 Trenton, N.J. 08625-0028



(609)633-7141

State of New Jersey DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

Michele M. Putnam Deputy Director Hazardous Waste Operations

John J. Trela, Ph.D., Director

Lance R. Miller Deputy Director Responsible Party Remedial Action

Jarl L. Opgrande Kalama Chemical, Inc. 1296 N.W. 3rd Avenue Kalama, Washington 98625

.AUG 1 1 1988

Dear Mr. Opgrande:

Re: ECRA Case #86B73

Kalama Chemical, Inc.

Garfield City, Bergen County

We have received your report entitled "ECRA Soil and Ground Water Investigation at the Kalama Chemical, Inc. Facility, Garfield, New Jersey" dated June 1988. The data show contamination in both soil and groundwater onsite above the Department's action levels. The recommendations of the report are to conduct a second round of sampling of selected wells to assess the need for additional monitoring wells. In order to keep this case moving forward in a timely manner, Kalama Chemicals must submit a specific Sampling Plan for soils and groundwater to the Department within forty-five (45) days of receipt of this letter. The Department will review and approve the plan in writing if it is found acceptable. A second round of sampling of the wells can be proposed in the Sampling Plan. A partial cleanup proposal (including cost breakdown) may also accompany the Sampling Plan for the areas onsite where contamination above action levels is known. All sampling must be done in accordance with the ECRA Sampling Plan Guide.

If you have any questions regarding this please feel free to contact the Case Manager, Andrew Dillman at 609-633-7141.

Very truly yours,

Peter P. Brussock, Ph.D., Section Chief

Bureau of Environmental Evaluation

~d Cleanup Responsibility Assessment

AWD:dg